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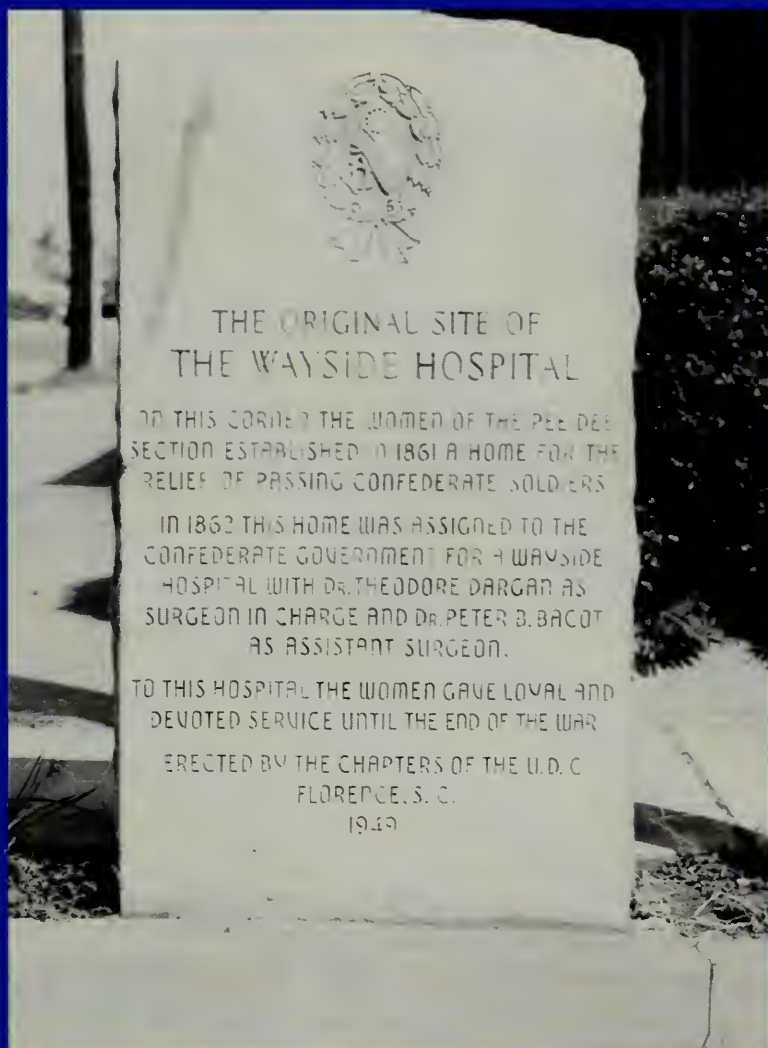
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**BORRELIA BURGDORFERI IN
SOUTH CAROLINA**

**FACIAL RECONSTRUCTIVE
SURGERY**

**HEALTH AND SOCIAL
SUPPORT FOR AGING
CLIENTELES**

THE AMA INTERIM REPORT





The recommended starting dose for Calan SR is 180 mg once daily. Dose titration will be required in some patients to achieve blood pressure control.

A lower initial starting dosage of 120 mg/day may be warranted in some patients (eg, the elderly, patients of small stature).

Constipation, which is easily managed in most patients, is the most commonly reported side effect of Calan SR.

BRIEF SUMMARY

Contraindications: Severe LV dysfunction (see *Warnings*), hypotension (systolic pressure < 90 mm Hg) or cardiogenic shock, sick sinus syndrome (if no pacemaker is present), 2nd- or 3rd-degree AV block (if no pacemaker is present), atrial flutter/fibrillation with an accessory bypass tract (eg, WPW or LGL syndromes), hypersensitivity to verapamil.

Warnings: Verapamil should be avoided in patients with severe LV dysfunction (eg, ejection fraction < 30%) or moderate to severe symptoms of cardiac failure and in patients with any degree of ventricular dysfunction if they are receiving a beta-blocker. Control milder heart failure with optimum digitalization and/or diuretics before Calan SR is used. Verapamil may occasionally produce hypotension. Elevations of liver enzymes have been reported. Several cases have been demonstrated to be produced by verapamil. Periodic monitoring of liver function in patients on verapamil is prudent. Some patients with paroxysmal and/or chronic atrial flutter/fibrillation and an accessory AV pathway (eg, WPW or LGL syndromes) have developed an increased antegrade conduction across the accessory pathway bypassing the AV node, producing a very rapid ventricular response or ventricular fibrillation after receiving I.V. verapamil (or digitalis). Because of this risk, oral verapamil is contraindicated in such patients. AV block may occur (2nd- and 3rd-degree, 0.8%). Development of marked 1st-degree block or progression to 2nd- or 3rd-degree block requires reduction in dosage or, rarely, discontinuation and institution of appropriate therapy. Sinus bradycardia, 2nd-degree AV block, sinus arrest, pulmonary edema and/or severe hypotension were seen in some critically ill patients with hypertrophic cardiomyopathy who were treated with verapamil.

Precautions: Verapamil should be given cautiously to patients with impaired hepatic function (in severe dysfunction use about 30% of the normal dose) or impaired renal function, and patients should be monitored for abnormal prolongation of the PR interval or other signs of overdosage. Verapamil may decrease neuromuscular transmission in patients with Duchenne's muscular dystrophy and may prolong recovery from the neuromuscular blocking agent vecuronium. It may be necessary to decrease verapamil dosage in patients with attenuated neuromuscular transmission. Combined therapy with beta-adrenergic blockers and verapamil may result in additive negative effects on heart rate, atrioventricular conduction and/or cardiac contractility; there have been reports of excessive bradycardia and AV block, including complete heart block. The risks of such combined therapy may outweigh the benefits. The combination should be used only with caution and close monitoring. Decreased metoprolol and propranolol clearance may occur when either drug is administered concomitantly with verapamil. A variable effect has been seen with combined use of atenolol. Chronic verapamil treatment can increase serum digoxin levels by 50% to 75% during the first week of therapy, which can result in digitalis toxicity. In patients with hepatic cirrhosis, verapamil may reduce total body clearance and extrarenal clearance of digoxin. The digoxin dose should be reduced when verapamil is given, and the patient carefully monitored. Verapamil will usually have an additive effect in patients receiving blood-pressure-lowering agents. Disopyramide should not be given within 48 hours before or 24 hours after verapamil administration. Concomitant use of flecainide and verapamil may have additive effects on myocardial contractility, AV conduction, and repolarization. Combined verapamil and quinidine therapy in patients with hypertrophic cardiomyopathy should be avoided, since significant hypotension may result. Concomitant use of lithium and verapamil may result in a lowering of serum lithium levels or increased sensitivity to lithium. Patients receiving both drugs must be monitored carefully. Verapamil may increase carbamazepine concentrations during combined use. Rifampin may reduce verapamil bioavailability. Phenobarbital may increase verapamil clearance. Verapamil may increase serum levels of cyclosporin. Verapamil may inhibit the clearance and increase the plasma levels of theophylline. Concomitant use of inhalation anesthetics and calcium antagonists needs careful titration to avoid excessive cardiovascular depression. Verapamil may potentiate the activity of neuromuscular blocking agents (curare-like and depolarizing); dosage reduction may be required. There was no evidence of a carcinogenic potential of verapamil administered to rats for 2 years. A study in rats did not suggest a tumorigenic potential, and verapamil was not mutagenic in the Ames test. Pregnancy Category C. There are no adequate and well-controlled studies in pregnant women. This drug should be used during pregnancy, labor, and delivery only if clearly needed. Verapamil is excreted in breast milk; therefore, nursing should be discontinued during verapamil use.

Adverse Reactions: Constipation (7.3%), dizziness (3.3%), nausea (2.7%), hypotension (2.5%), headache (2.2%), edema (1.9%), CHF, pulmonary edema (1.8%), fatigue (1.7%), dyspnea (1.4%), bradycardia: HR < 50/min (1.4%), AV block: total 1°, 2°, 3° (1.2%), 2° and 3° (0.8%), rash (1.2%), flushing (0.6%), elevated liver enzymes, reversible non-obstructive paralytic ileus. The following reactions, reported in 1.0% or less of patients, occurred under conditions where a causal relationship is uncertain: angina pectoris, atrioventricular dissociation, chest pain, claudication, myocardial infarction, palpitations, purpura (vasculitis), syncope, diarrhea, dry mouth, gastrointestinal distress, gingival hyperplasia, ecchymosis or bruising, cerebrovascular accident, confusion, equilibrium disorders, insomnia, muscle cramps, paresthesia, psychotic symptoms, shakiness, somnolence, arthralgia and rash, exanthema, hair loss, hyperkeratosis, macules, sweating, urticaria, Stevens-Johnson syndrome, erythema multiforme, blurred vision, gynecostasia, galactorrhea/hyperprolactinemia, increased urination, spotty menstruation, impotence.

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President's Page

RBRVS: A SURVIVAL GUIDE

Dateline January 1, 1992. RBRVS is finally complete. The Resource-Based Relative Value Scale has been called the "most significant revision of the Medicare physician payment system in the program's 25-year history." Newspapers across the country have ex-

plained the new single national fee schedule. Already, many insurance companies are planning to switch to the RBRVS, rather than their traditional fee schedules. Some are even planning (threatening?) to use the same conversion factor (i.e., fees) as Medicare.

RBRVS was the main agenda item at the AMA meeting three years ago. The consensus was that reimbursement was too high for procedures and too low for office visits. The Reference Committee debate was heated and valid criticisms were made of the methodology of RBRVS. At the time it seemed to me that the Harvard study had underestimated the time involved in performing many surgical procedures. The AMA, and your SCMA delegation, eventually supported the RBRVS because it believed that a major change in the physician reimbursement system was necessary.

From the beginning, many physicians thought the government would use the RBRVS to reduce reimbursements for procedures without increasing payments for visits. That fear was further heightened in June when HCFA announced the new fee schedule which included a 16 percent cut. After a major grassroots campaign, the cut has been reduced to 5.5 percent. Initially everyone had assumed that there would be winners and losers in the new system. Unfortunately, there may be no winners. The latest prediction is that only family practitioners will see an increase in income under the new Medicare schedule, with all other groups, including internists, being cut.

The new evaluation and management CPT codes add a whole new dimension to the changes. Physicians had very little opportunity to study the new system before it was implemented this month. With new code definitions and limiting charges at a maximum of 120 percent of non-participation fees, there is a risk of lower office reimbursement.

Numerous questions come to mind. Will physicians feel the RBRVS has been fairly implemented? Five years from now, when some of the kinks in the new system have been worked out, will we be satisfied that it is a good system? Will the changes lead to greater income for primary care physicians? If so, will we see more young physicians choose to become primary care specialists? Will RBRVS and the new CPT codes be just another hassle with which all of us must deal? Will the changes in reimbursement force physicians to practice more efficiently? Will these changes further erode the doctor-patient relationship? Will it be harder for Medicare patients to find a caring physician who will spend the time with them?

The RBRVS and CPT code changes will be a challenge for all of us. As a surgeon, I find it easy to be pessimistic and critical. As a physician, I realize the change was both inevitable and necessary. The change is just starting, and we need to work to insure that it is fair for all physicians. RBRVS has the potential to be a very divisive wedge. We must rise above that and work to attain a united profession. Most of all, we must insure that the inevitable hassle of the first few months will not interfere with our commitment to be good physicians.

J. Chris Hawk III M.D.

J. CHRIS HAWK, III, M.D.

President



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AN INITIAL INVESTIGATION OF THE STATUS OF *BORRELIA BURGDORFERI* AND ITS SUSPECTED PRIMARY VECTOR, *IXODES SCAPULARIS*, IN SOUTH CAROLINA*

W. E. BARTON, Ph.D.**

E. W. GRAY, M. Ag.

D. SHIPES, M.S.

Lyme disease, caused by the spirochete bacterium *Borrelia burgdorferi*,¹ has been reported from 44 states in the USA² with the highest incidence of disease occurring in the northeastern states. Lyme disease has also been reported from at least 19 countries in Europe and from Australia, Japan and China.³ The most common vectors of Lyme disease are ticks from the *Ixodes ricinus* species complex which can acquire the spirochete as a larva, nymph, or adult.⁴

The suspected vector of Lyme disease in the southeast is the blacklegged tick, *Ixodes scapularis* Say. The vector competence of this tick has been proven in the laboratory,⁵ and field disease transmission studies are being conducted in various areas of the southeast. In addition, some studies have indicated that *I. scapularis* and *I. dammini* Spielman, Clifford, Piesman, and Corwin, the proven vector of Lyme disease in the northeast, are in fact the

same species based on vectorial capacity in the laboratory and cross-breeding experiments.⁴ Morphologically, the primary character used to separate the two species is the shape of a spur arising from the first segment of the front legs.⁶ While *I. scapularis* is a prime vector suspect due to its close relationship to *I. dammini*, other tick species, such as *Amblyomma americanum*,⁷ cannot be overlooked in disease transmission investigations.

The prevalence of Lyme disease in South Carolina is a hotly debated topic among public health officials and the medical profession, with the center of debate being the difficulty of accurate diagnosis of Lyme cases.^{8, 9, 10} Prevention and diagnosis would be facilitated by a greater understanding of the distribution and prevalence of the vectors of Lyme disease and the causative agent. Therefore, as the initial step toward determining the distribution of *I. scapularis*, the suspected primary vector, in South Carolina, hunter-harvested deer brought to big game check stations and deer harvested on private hunt clubs were examined for the presence of ticks from 2 October to 17 December 1989. In the southeast, the white-tailed deer is the primary host for adult *I. scapularis*, which are active in the fall and winter months.

* From the Department of Entomology, College of Agricultural Sciences, Clemson University, Clemson, S.C. (Dr. Barton and Mr. Gray), and the South Carolina Wildlife and Marine Resources Department, Columbia, S.C. (Mr. Shipes).

** Address correspondence to Dr. Barton at the Department of Entomology, 114 Long Hall, Clemson, SC 29634-0365.

MATERIALS AND METHODS

South Carolina can be topographically divided into four regions: mountains, piedmont, sand hills, and coastal plains. Much of the deer hunting in the mountains and piedmont is done on Wildlife Management Areas managed by the South Carolina Wildlife and Marine Resources Department (SCWMRD), while most deer hunting in the sand hills and coastal plain is done on privately-owned land. Consequently, hunter-harvested deer in the mountains and piedmont were examined at check stations managed by the SCWMRD while most deer harvested in the sand hills and coastal plain were examined on private hunt club property.

Deer at all locations were searched for 10 minutes with the aid of a comb to manipulate the hair, beginning with the muzzle, and usually continuing down through the brisket area as time allowed. All inspections were conducted by personnel of the Clemson University Department of Entomology and the SCWMRD. All ticks encountered during the 10-minute search were removed with forceps and, if necessary, a scalpel. A blade of grass was added to each collection vial, one vial per deer, to maintain sufficient moisture for tick survival. *I. scapularis* in good physical condition (i.e. active, capitulum or head region intact) were mailed to Dr. John Anderson (Dept. of Entomology, Connecticut Agricultural Experiment Station) by way of Dr. James H. Oliver (Georgia Southern College) for Lyme spirochete detection. Spirochete detection techniques were the culture of the gut contents followed by indirect immunofluorescent antibody (IFA) smears or by IFA smears of gut contents only. No attempt was made to culture gut contents if the tick was partially engorged with a blood meal. Ticks which had damaged mouthparts, were fully engorged or inactive when examined in the laboratory were placed in 95% ethanol for species identification.

RESULTS AND DISCUSSION

A total of 3,022 ticks were removed from 267 deer in 1989 (Table 1). *Dermacentor albipictus*, the winter tick, comprised 72.6% of the total tick collection. Of the remainder, 26.8% were *I. scapularis*, the black-legged tick,

0.5% *A. americanum*, the lone star tick, and 0.1% *A. maculatum*, the gulf coast tick. The suspected primary vector of Lyme disease in South Carolina, *I. scapularis*, was collected in 18 of 20 counties. This species was not collected on deer from Oconee and Saluda Counties. However, sample sizes were small from these counties. With continued sampling, *I. scapularis* probably will be recovered from all South Carolina counties.

All *I. scapularis*, *A. americanum*, and *A. maculatum* removed from deer were adults. The immature stages typically are not active during late fall and early winter. In contrast, all life stages of *D. albipictus* (a one-host tick) were encountered: 51.4% of the 2,196 individuals collected were adults, 45.4% nymphs, and 3.2% larvae. Regionally, *D. albipictus* predominated on deer in the piedmont while *I. scapularis* was predominant in the sand hills and coastal plain. *D. albipictus* comprised >50% of the collections in the piedmont counties of Abbeville, Chester, Fairfield, Greenwood, Laurens, McCormick, Newberry, Saluda, Spartanburg, and Union (160 deer total). *D. albipictus* comprised >80% of the collection in nine of these counties. *I. scapularis* was predominant in the sand hill and coastal plain counties, exceeding 80% of the collections in Aiken, Allendale, Edgefield, Florence, Georgetown, Hampton, and Orangeburg (84 deer total). Only one tick, an *I. scapularis*, was removed from 23 deer examined in Oconee and Pickens counties (Mountain Hunt Unit) which would indicate low *I. scapularis* and *D. albipictus* populations in this area. These deer were examined in early December when these two species would be active. *A. americanum* was collected in Edgefield, Florence, Georgetown, Hampton, and McCormick counties. Two *A. maculatum* were collected in Charleston Co.

Two hundred seventy-one *I. scapularis* [116 females (IsF), 155 males (IsM)] and five *A. americanum* males (AaM) in good physical condition were analyzed for the presence of the Lyme spirochete (Table 2). None were found to be infected with *Borrelia burgdorferi*. One *I. scapularis* from Georgetown County was infected with *Trypanosoma* sp., a typically pathogenic protozoan genus.

Lyme disease cases have been document-

ed in South Carolina residents which indicates that *B. burgdorferi* is endemic in this state. Based on this initial investigation, the infection rate in the state's tick population is very low. However, due to the higher percentage of *I. scapularis* in the sand hills and coastal plain as compared with the piedmont and mountains, it is reasonable to expect a higher risk and rate of Lyme disease in these regions, assuming that *I. scapularis* is indeed the primary vector. A much larger number of *I. scapularis*, *A. americanum* and other tick species from more locations in the state must be analyzed for spirochete infection before estimates of the probability of acquiring Lyme

disease in South Carolina can be given.

SUMMARY

Based on a survey of hunter-harvested deer, the suspected primary vector of Lyme disease in the Southeast, *I. scapularis*, is most prevalent in sandhill and coastal plain counties of South Carolina. None of 271 *I. scapularis* examined were found to be infected with the Lyme disease spirochete. However, many more specimens of *I. scapularis*, *A. americanum*, and other tick species must be examined before an accurate estimate of the probability of acquiring Lyme disease in South Carolina can be made. □

Table 1

Ticks Removed from Hunter-Killed Deer in South Carolina, October to December, 1989.

(Sample size=number of deer inspected)

County	Sample Size	<i>Dermacentor albipictus</i>	<i>Ixodes scapularis</i>	<i>Amblyomma americanum</i>	<i>Amblyomma maculatum</i>
Mountains					
Oconee	9	0	0	0	0
Pickens	14	0	1	0	0
Piedmont					
Abbeville	7	150	3	0	0
Chester	16	217	13	0	0
Edgefield	31	11	128	8	0
Fairfield	37	404	2	0	0
Greenwood	21	359	3	0	0
Laurens	10	169	3	0	0
McCormick	29	390	53	1	0
Newberry	11	131	13	0	0
Saluda	1	7	0	0	0
Spartanburg	1	19	4	0	0
Union	27	334	38	0	0
Sand Hills					
Aiken	20	0	311	0	0
Allendale	2	0	6	0	0
Orangeburg	1	0	1	0	0
Coastal Plain					
Charleston	1	0	4	0	2
Florence	13	4	58	1	0
Georgetown	10	1	117	1	0
Hampton	6	0	52	3	0
TOTALS	267	2196	810	14	2

Table 2

**Analysis of *Ixodes scapularis* and *Amblyomma americanum*
removed from hunter-killed white-tailed deer in South Carolina,
October 2 to December 15, 1989, for the presence of *Borrelia burgdorferi***

County	Date	Culture & IFA			IFA Only		
		IsF	IsM	AaM	IsF	IsM	AaM
Piedmont							
Chester	10/28	4	4	0	6	7	0
Edgefield	10/28-11/1	3	9	0	31	33	0
Newberry	10/28	0	0	0	3	4	0
Union	10/27-11/11	0	0	0	4	5	0
Sand Hills							
Aiken	11/4-11/23	26	54	0	19	14	0
Allendale	10/22	0	1	0	1	0	0
Coastal Plain							
Florence	11/11	1	0	0	0	5	0
Georgetown	11/15-11/18	11	4	4	7	15	1
TOTAL		45	72	4	71	83	1

IFA=Indirect immunofluorescent antibody
IsF=*Ixodes scapularis* female

IsM=*Ixodes scapularis* male
AaM=*Amblyomma americanum* male

ACKNOWLEDGMENTS

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REFERENCES

1. Steere AC, Grodzicki RL, Kornblatt AN, et al: The spirochetal etiology of Lyme disease. *N Engl J Med* 308:733-40, 1983.
2. James AM, Oliver JH: Feeding and Host Preference of Immature *Ixodes dammini*, *I. scapularis*, and *I. pacificus* (Acari: Ixodidae). *J Med Entomol* 27:324-330, 1990.
3. Schmid GP: The global distribution of Lyme disease. *Rev Infect Dis* 7:41-50, 1985.
4. Oliver JH: Lyme disease: tick vectors, distribution, and reservoir hosts. *J Med Assoc GA* 78:675-78, 1989.
5. Piesman J, Sinsky RJ: Ability of *Ixodes scapularis*, *Dermacentor variabilis*, and *Amblyomma americanum* (Acari: Ixodidae) to acquire, maintain, and transmit Lyme disease spirochetes (*Borrelia burgdorferi*). *J Med Entomol* 25:336-339, 1988.
6. Luckhart S, Mullen GR, Wright JC: Etiologic agent of Lyme disease, *Borrelia burgdorferi*, detected in ticks (Acari: Ixodidae) collected at a focus in Alabama. *J Med Entomol* 28:652-657, 1991.
7. Keirans JE, Litwak TR: Pictorial key to the adults of hard ticks, family Ixodidae (Ixodida: Ixodoidea), east of the Mississippi River. *J Med Entomol* 26:435-448, 1990.
8. Rumpel C, Jones JL: Lyme disease in South Carolina. *J SC Med Assoc* 87:420-423, 1991.
9. Schuman SH, Caldwell ST: 1990 South Carolina physician survey of tick, spider and fire ant morbidity. *J SC Med Assoc* 87:429-432, 1991.
10. Bryan CS: Non-Lyme disease. *J SC Med Assoc* 87:433-436, 1991.

AESTHETIC CONSIDERATIONS IN FACIAL RECONSTRUCTIVE SURGERY: A PLASTIC SURGICAL PERSPECTIVE*

RAM KALUS, M.D.**

SERGIO ZAMORA, M.D.

INTRODUCTION

Non-melanoma skin cancers are currently the most common malignancies in Caucasian Americans.¹ Fortunately, the majority of cases are detected early enough to allow for appropriate and complete cure. In the case of basal cell carcinomas (BCC), gradual local invasion is the rule with metastases virtually nonexistent. The most common site of occurrence of both basal cell carcinomas (BCC) and squamous cell carcinomas (SCC) is the skin of the head and neck, and dorsum of the hand, areas readily visible to both patients and their families. Specifically, 85% of all BCC's appear in the head and neck with 25-30% occurring on the nose.² The persistence of a nonhealing ulcer or slowly growing mass accounts for the majority of clinical presentations, with BCC predominating as 80% of non-melanoma skin malignancies.

The most frequent associated etiologic factor in development of basal and squamous cell carcinomas is solar damage, especially UVB light in the 290-320nm spectrum.³ This explains the frequent finding of tumors arising in a background of profound solar damage to the surrounding skin including wrinkling, actinic keratoses, and solar elastosis. With recent evidence of depletion of the ozone layer, environmental scientists predict a significant rise in the incidence of skin malignancies over the next two to three decades.

There is little doubt that genetic and ethnic factors play an important role, with skin malignancies occurring far more frequently in

fair-skinned caucasians, particularly of Celtic extraction, than, for example, darker complected individuals. Melanin is therefore felt to be protective and probably explains the relatively low incidence of such malignancies in African Americans.

The treatment rendered will frequently depend upon the preference of the physician caring for that patient. In the case of skin cancers it might be a primary care physician, dermatologist, general surgeon, plastic surgeon or otolaryngologist. Treatment may vary from topical antineoplastic agents (i.e. 5-Fluorouracil ointment) to Moh's chemosurgery to formal excision and reconstruction. The goal, regardless of the specialty of the physician, should be first and foremost an appropriate cancer operation, namely complete excision and/or destruction with adequate margins (usually 2-5 mm). The goals of reconstruction, however, might vary significantly both between and within specialties. From the plastic surgeon's perspective the reconstruction should fulfill both functional and aesthetic requirements with the ultimate goal ideally being a restoration of *normal* facial appearance.



FIGURE 1: Reconstructive ladder of wound closure options in ascending order of complexity.

* From the Division of Plastic and Reconstructive Surgery, Department of Surgery, University of South Carolina School of Medicine, Columbia, S.C.

** Address correspondence to Dr. Kalus at the Department of Surgery, Division of Plastic Surgery, University of South Carolina School of Medicine, Two Richland Medical Park, Suite 300, Columbia, SC 29203.



FIGURE 2: Example of full thickness skin graft reconstruction of nasal lobule defect. At six months postoperatively, the aesthetic appearance is suboptimal.

CLIMBING THE LADDER

Plastic surgeons frequently refer to the concept of a reconstructive ladder (Fig. 1) with the principle being:

Find the simplest solution which will satisfy the reconstructive needs of the patient.

While healing by secondary intention or a skin graft might fulfill the requirement of achieving ultimate wound closure, the functional and/or aesthetic result may not be ideal (Fig. 2). Furthermore, local flaps, if not designed properly, may heal with a “flap-like” appearance resulting from edema of the flap creating a prominent bulge where one should not exist (Fig. 3).

RECONSTRUCTION BY REGION

When feasible, primary closure is the preferred method of reconstruction as long as an acceptable aesthetic result can be achieved. This is particularly true for malignancies of the lip (Fig. 4), pre-auricular region, or other areas where skin laxity allows for direct wound edge approximation.

One of the flaps we have found especially versatile in the infra-orbital, paranasal, and nasal alar regions is the “kite” flap named such by Dufourmentel,¹ also referred to as the subcutaneous pedicle or V-Y advancement flap.² This flap is extremely reliable when elevated properly and allows for maximal preservation of vascular and lymphatic circulation, thus often circumventing the complication of flap edema often seen with transposition flaps (Fig. 4 a-e). The V-Y flap can be



FIGURE 3: Nasolabial pedicled flap for nasal lobule reconstruction three years postoperatively. The flap remains edematous and “flap-like” in appearance.

based subcutaneously or as a musculocutaneous flap based on the orbicularis oculi muscle in the case presented in Fig. 5. When properly designed, the V-Y advancement flap can follow naturally existing facial skin creases and contour lines, thus achieving minimal surgical deformity (Figs. 6, 7).

For dorsal nasal resurfacing, the frontonasal flap³ based on the angular vessels is extremely useful and reliable. For more extensive lesions a combination of flaps may be required (Fig. 8). For less extensive lesions of the nasal lobule, the kite flap is our preferred method of reconstruction for the reasons previously mentioned (Fig. 9). For lesions involving the alar rim in full thickness, composite grafts (consisting of skin and cartilage from the ear; skin and fat from the neck) may be used, although one is limited to a relatively small surface area which can be expected to reliably survive as a free graft.

Lesions of the forehead or temple, particularly where the integrity of the hairline and eyebrow need to be maintained, are ideally reconstructed with a so-called “H-flap” or bilateral advancement flaps⁴ (Fig. 10). This form of reconstruction allows for preservation of both the hairline and the eyebrow with minimal distortion.

Lesions of the eyelids are frequently reconstructed with a full thickness skin graft from the contralateral or ipsilateral upper eyelid where the skin excess is especially common in elderly patients. This is the very same tissue which is excised and discarded in cos-

Fig. 4(a): Margins for excision of invasive squamous cell carcinoma of lower lip.

(b): Defect following excision with clear margins.

(c): Immediate postoperative appearance following primary closure.

(d), (e): Appearance 8 months postoperatively demonstrating minimal functional limitation.

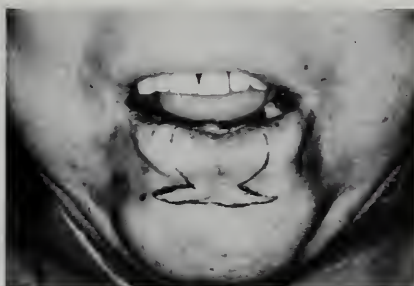


FIGURE 4a



FIGURE 4b



FIGURE 4c

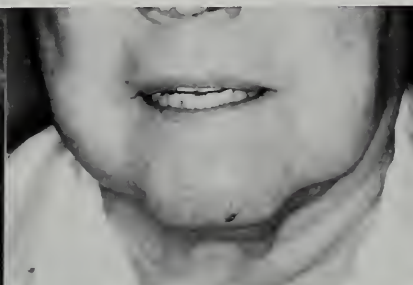


FIGURE 4d

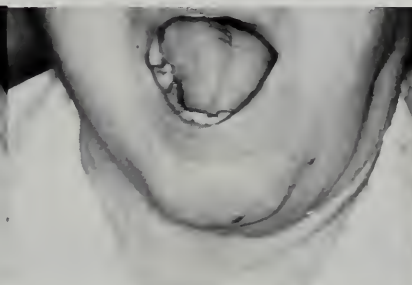


FIGURE 4e

Fig. 5(a): Patient with nodular BCC of lower eyelid. Note previous glabellar flap reconstruction of medial canthus performed elsewhere.

(b): Defect following excision with clear margins, musculocutaneous kite flap designed.

(c): Immediate postoperative appearance.

(d): Appearance 1 year postoperatively.

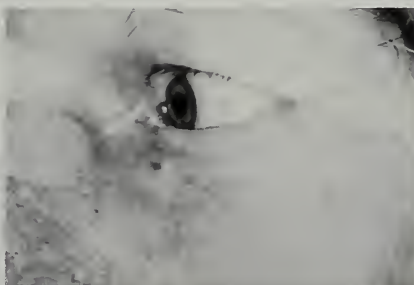


FIGURE 5a

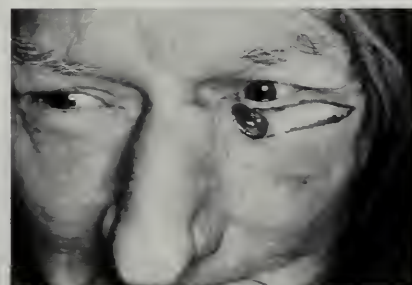


FIGURE 5b



FIGURE 5c



FIGURE 5d

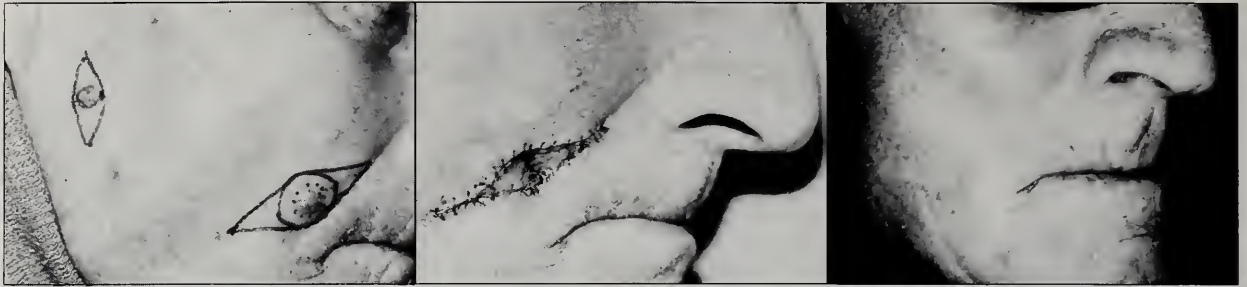


Fig. 6(a) (left): Patient with two nodular BCC's. The preauricular lesion was excised and closed primarily. (b) (middle): Immediate postoperative appearance following bilateral V-Y ("kite") flap reconstruction. (c) (right): Appearance 6 months postoperatively.



Fig. 7(a) (left): Large medial canthal defect following excision of nodular ulcerative BCC with musculocutaneous kite flap designed. (b) (middle): Immediate postoperative appearance with small suction drain in place. (c) (right): Postoperative appearance at 9 months.

Fig. 8(a): Large defect of nasal dorsum following excision of sclerosing BCC. Nasolabial kite flap designed. (b): Size of defect demanded addition of frontonasal flap to complete the reconstruction. (c): Immediate postoperative appearance. (d, e): Appearance at 9 months. The interface of flap and nasal dorsum is particularly noticeable because of mild rhinophyma of the lobule and tip.



FIGURE 8a

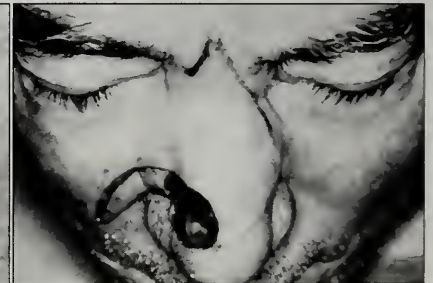


FIGURE 8b



FIGURE 8c

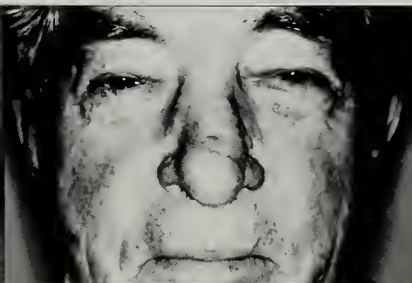


FIGURE 8d

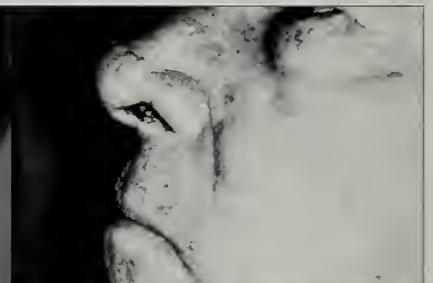


FIGURE 8e



Fig. 9(a) (left): Defect of nasal ala with exposed cartilage, kite flap designed.
 (b) (middle): Immediate postoperative appearance.
 (c) (right): Appearance 8 months postoperatively.

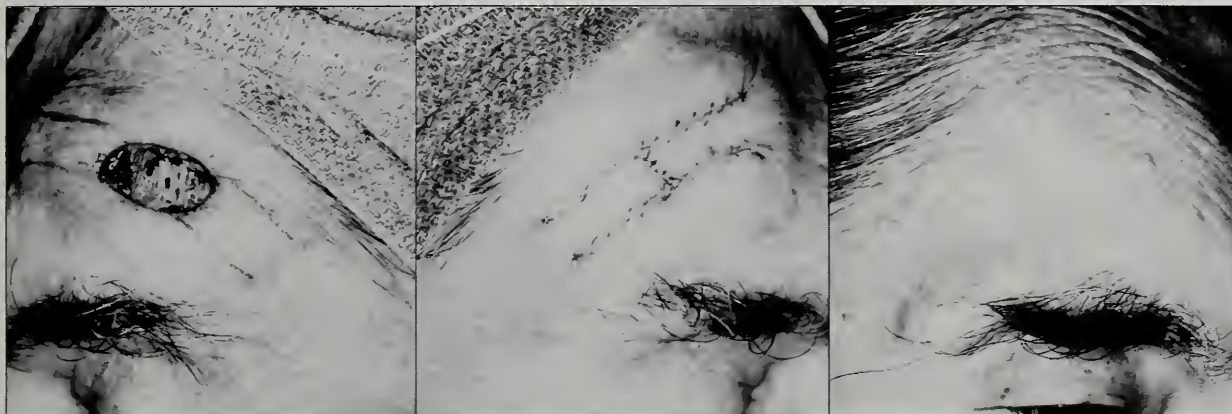


Fig. 10(a) (left): Forehead defect following excision of sclerosing BCC exposing frontalis muscle, H-flap designed.
 (b) (middle): Immediate postoperative appearance.
 (c) (right): Appearance 10 months postoperatively. Note preservation of hairline and brow contour.

metic blepharoplasty (Fig. 11). For more extensive lesions involving the full thickness of the lid, more complex reconstructions would be required.

CONCLUSION

The primary consideration in management of BCC and SCC of the skin of the head and neck is, as with any cancer operation, adequate tumor resection. Reconstructive options should be selected with the goal of achieving an optimal functional and aesthetic result. The choice of reconstruction is based on the size of the defect, the vascular and topographical anatomy of the region, and the predictability of a functionally and aesthetically successful outcome. □

REFERENCES

1. Silverberg E and Lubera JA (1989) Cancer statistics, 1989. *CA* 39(1):3.
2. Kopf AW (1979) Computer analysis of 3,531 basal cell carcinomas of the skin. *J Dermatol Surg Oncol* 6:267.
3. Lang N et al (1988) Malignant Diseases of the Skin, in *Essentials of General Surgery*, p. 344. Williams and Wilkins, 1988 Baltimore.
4. Dufourmentel C, Talaat SM (1971) The kite flap. *Trans Fifth Intl Congress Plast Reconst Surg*, Melbourne. Butterworth, 1123.
5. Herbert DC, Degens J (1975) Nasolateral subcutaneous pedicle flaps. *Br J Plast Surg* 28:90.
6. Marchac D (1970) Lambeau de rotation fronto-nasal. *Ann Chir Plast* 5: 44-49.
7. Marchac D *Surgery of Basal Cell Carcinoma of the Face*, p. 69. Springer Verlag, 1986 Geneva.

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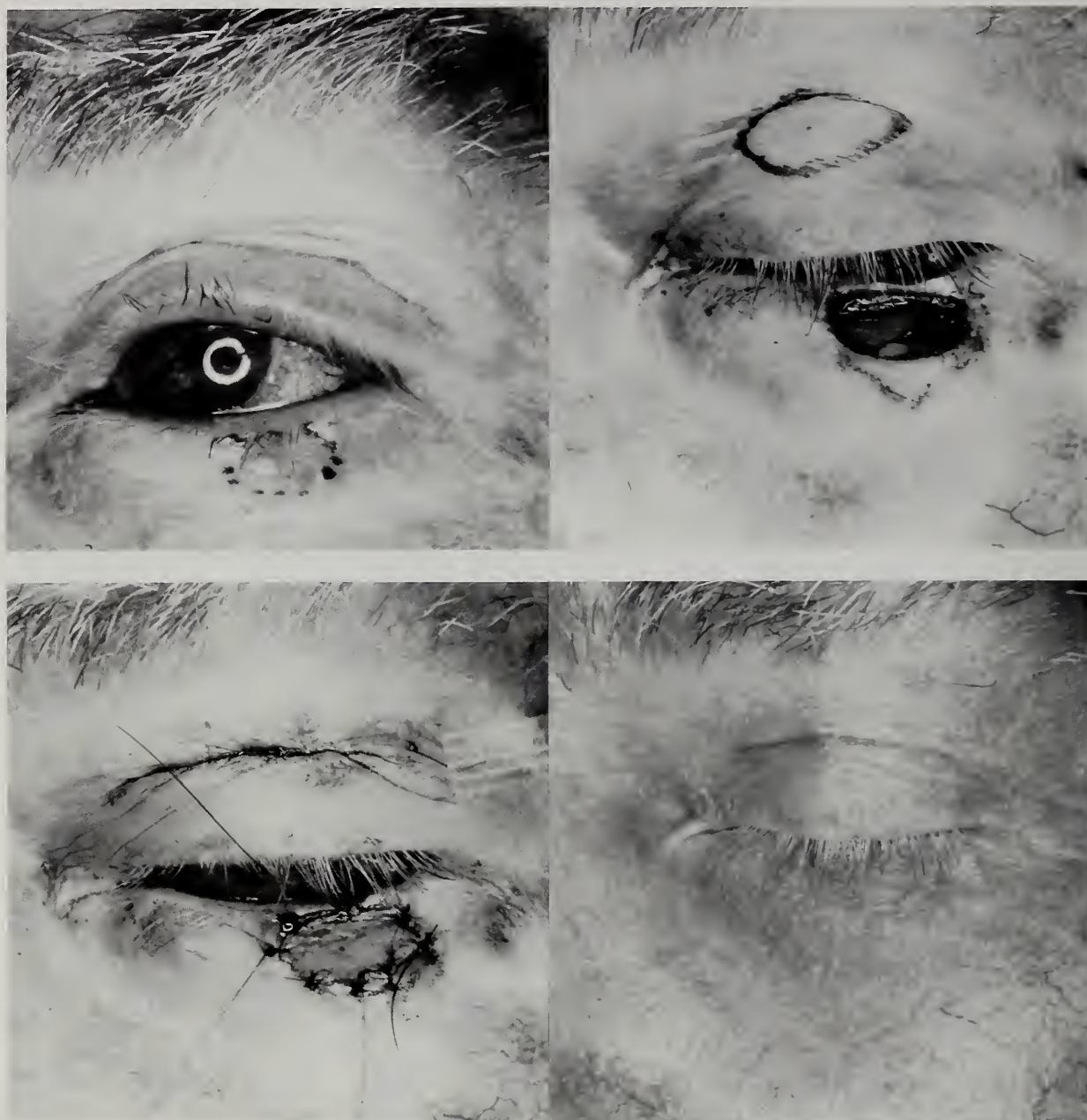


Fig. 11(a) (upper left): Nodular BCC of lower eyelid.
(b) (upper right): Defect exposing orbicularis muscle. Full thickness skin graft donor site marked.
(c) (bottom left): Skin graft sutured in place, donor site closed primarily.
(d) (bottom right): Early postoperative appearance at 3 months.

HEALTH AND SOCIAL SUPPORT FOR AGING CLIENTELES

HARDY WICKWAR*

When Hippocrates and his followers carved out a special role for the physician, they were being scientific in recognizing that the functioning of a human depended on natural and physical phenomena, but at the philosophic cost of passing by the importance of social and moral phenomena that intrigued Aristotle.

Twentieth-century pediatricians, however, have become advisers to families on the normal and holistic course of human development at least as much as interveners when something goes wrong physically. The geriatricians of the 1990's know equally that the functioning of aging humans depends at least as much on personal effort and familial and community caring as on medical intervention.

Similarly with the hospital as it has emerged in the 1990's. For acute care it has offered a Hippocratic workshop outside the home; but for continuing care, it has come to rely largely on such support as individual patients can get in their own homes.

It is to this complementary and supportive care, on which physicians and hospitals rely, that this article is devoted. It explores the structure of organized caring by and of older humans as an inherent part of our family and community living.

FAMILY AND COMMUNITY

Much of this supportive care happens in the family. There is some evidence that in an intact elderly couple, an unwell mate may be more likely to go to bed than to the doctor's office or hospital. There is plenty of evidence of a daughter or daughter-in-law looking after a parent, even to the point of giving priority to this relationship over that of going to paid employment outside the home. Beyond the family some supportive care may come in an emergency from a neighbor or from some

good Samaritan who is here today and gone tomorrow.

Beyond the family ties and neighborliness that make for spontaneous caring comes also the care that springs from more formal organizing. At an only slightly broader face-to-face level, it may come as mutual aid among fellow members of a religious or fraternal or other organized group to which the beneficiary or his family belongs.

Beyond this primary circle, support from the community in its wider reaches may be purposively and formally organized in many ways. It may be made available through some kind of local operational program, dedicated narrowly to a particular benefactory function in the home or out of the home, or broadly to a range of such functions. Or it may be targeted at serving a particular category of beneficiaries such as persons at some particular phase in their life course. In this latter case, the agency may focus on support to services supplied by other providers, or it may itself become a service provider, at least as a gap-filler.

COMMUNITY AGING SUPPORT

In our civilization as it has developed during the 1900's, this multiform development of non-medical supportive care has become a universal phenomenon. People in each country, however, have approached it in ways that suit their country's own economic, political and social culture.

In any modern country, the question may be posed: How and how far is aging support bound up with local aging agencies? And, if so, how far do these identify with and represent their local communities? In our pluralist societies and cultures, this may mean, how far do they identify with all the key organizations—political, economic and social—with which the community is bound?

This question becomes especially challenging and revealing in the United States

*Address correspondence to Mr. Wickwar at the Council on Aging of the Midlands, One Greystone West, Suite 207, 24 Stoneridge Drive, Columbia, SC 29210.

where Alexis de Tocqueville in the 1820's perceived democracy in terms of the broad dissemination of societal power in its many manifestations. Here if anywhere one ought to be able to discover and delineate a supportive service, by and for aging persons, permeating and permeated by every other kind of serving organization.

COUNCILS ON AGING

In the United States, a standard pattern or "ideal type" of support system has been generated, but with considerable freedom as to whether or how far it will be applied in particular states or local communities. This is the dual concept, at once vertical and horizontal, of an Older Americans Network consisting top down of a three-tiered federal/state/area bureaucracy, surmounting at the operating level a voluntary self-governing "Council on Aging" that reaches out into its local community, however this may define itself. Ideally such a Council on Aging becomes the lead agency for formally organized operations in support of older citizens.

Functionally, this means supporting older citizens in two important ways. First and foremost, support of active aging: helping older citizens in their efforts to look after themselves, help one another, and be an asset to their community. The other is to help older citizens who become functionally dependent on others either temporarily or continuingly, in their efforts to look after themselves and be as little as possible of a burden or liability to their family carers and to their community.

Such a Council has also two complementary clienteles with whom it interacts: those who work in it and for it, and those for whom and with whom it works. In South Carolina, for example, the 25-year-old Council on Aging of the Midlands has 1,500 senior volunteers and delivers "Meals on Wheels" to seniors who have difficulty fixing a meal.

Structurally such a Council on Aging becomes ideally the age-oriented focal point of the local community in all its pluralism. This means digging in its roots into all three sectors of organized social activity that make up the life of such a community in our contemporary world: the economic or private for-profit, the governmental or public non-profit

and the social or private non-profit. In the last of these three sectors, the Council on Aging can play either a loner or an interdependent role according to how far it helps the others function together in a highly organized contemporary and urbanized American-style local community with all its pluralist diversity and its combination of competitiveness and cooperation.

The Council on Aging of the Midlands in the capital of South Carolina places volunteers in 150 "work stations," including the Children's Hospital and a terminal hospice program.

Economic Aging—The private for-profit sector of such a local community may be looked at both functionally and structurally as interpenetrations develop between it and the local community Council on Aging. Functionally, it works at three levels of economic activity: the primary level with its agrobusinesses; the secondary with its manufacturing concerns; and the tertiary with its service firms. Structurally it may be mainly competitive, but includes important regulated and quasi monopolies. This sector may also be to varying degrees under local control, or under out-of-state control whether national or trans-national.

In all of these aspects, corporate business brings concerns and resources that make it an important third party, affecting relations between the Council on Aging and its actual and potential clients. Its component businesses tend to cultivate the image of the good corporate citizen that encourages employees to be also social volunteers both while employed and after retiring. They have employees who are also carers who need help if they are to do both jobs. All of them including their insurers have a financial interest in community support services being available and accessible to their employees as an alternative, in appropriate cases, to more expensive healthcare services, or as a means of making that healthcare more effective. Their sponsoring of Council programs can thus be of many-sided interest to both parties.

Political Aging—The public non-profit sector may be looked at as wielders of governmental power or as providers of services to citizens.

In both capacities, it is sensitive in our constitutional democracies to senior citizens being one-third of potential and one-half of actual voters. At any territorial level it may also speak with many voices.

The United States Congress may use its fiscal power in aid of Councils on Aging under both Older Americans and Community Action programs, with their different emphases and administrations. State governors may have multiple federal fundings at their discretion. County governments, as leviers of taxes, grant immunity to institutions they deem to be eleemosynary and help individual senior citizens help themselves as home owners. As issuers of tax-exempt bonds, they may invest in senior centers and then let them earn their keep, as they are able to do on a larger scale with public hospitals and municipal water supply. They can contribute to the operating costs of Councils on Aging as of centers for active aging. They may help by way of a multitude of services, from education and recreation to correctional community service.

Nor should we forget that there is a middle way of publicly owned agencies which pay their way by charging for services. Water supply and hospital care are major examples of such services on which older as well as younger persons depend. Counties may even decide whether to make their aid conditional on Councils of Aging becoming administrative units in local government bureaucracy, or alternatively to facilitate innovation and enterprise by privatizing aging service responsibilities on to them as non-profit private entities.

Social Aging—Between the economic and political sectors but singularly near to a Council on Aging may be the “third sector” of private but non-profit social entities. Some of these may be endowed charitable foundations or trusts that can sponsor active aging or other aging services in a state or community. Most, however, are membership organizations: special purpose protective or assistive agencies; clubs that can sponsor civic service; advocacy groups including ethnic leagues that can combine advocacy with self-help; neighborhood associations; and religious bodies of different faiths and rites that can work side by side or

together in offering shelter and support for works of education and charity. Such agencies are often far from being purely social. Some may constitute essentially a non-profit socioeconomic advocacy infrastructure for for-profit entities, as with Chambers of Commerce and professional associations, while also sponsoring services pro bono publico by their membership. Others may constitute essentially non-profit sociopolitical advocacy groups for governmental entities, including federations of state commissions and area agencies on aging in the United States. Nor should one omit the private membership associations of employees of both private and public aging and related agencies, who serve as advocacy groups both for their membership and for the services in which they work.

Among the many socioeconomic, sociopolitical, and social groups are some that emerge in an American community as powerful third parties that permeate and are permeated by a host of entities whether primarily economic, political or social. Such are United Ways that enable businesses and their Chambers of Commerce to rationalize the benevolent giving of themselves and their employees, that can enter into partnerships also with public agencies, and that can help Councils on Aging with grants and advances and the power and persuasion that can help them generate cooperation rather than duplication. What Chambers of Commerce and United Ways do on a grand scale, a Council on Aging does in respect to its own clientele; an organized group in a free-growing forest of organized groups, it digs roots broad and deep into the organized community in all its many manifestations.

Governments at all levels have long found it convenient to devolve responsibility for human and cultural service management on to private public-benefit organizations, with their flexibility, their sensitivity to customer needs and wants, and their access to volunteer knowledge, experience, and funding. They have learned, moreover, to do this in many ways, from funding to contracting to franchising to partnership, to be copied in the worldwide present-day “privatization” of economic infrastructure out from the political in to the economic sector. Thus viewed, Councils on

Aging of American local communities are but part of well-established institutional patterns of collective behavior in all our economically developed countries.

HOSPITALS

American hospitals fall into all three categories of community organizations with which a Council on Aging has to live and work: private for-profit, public non-profit and private non-profit. They all have in common their focus on health care for which they are paid, mainly by private and public insurers, so that their medical staff members, their discharge planners and their patients find it convenient to have a community Council on Aging provide supportive services for those of their patients who need non-medical short-term or recurrent or continuing care after their return home.

The gradual conquest of human diseases and disorders is leading acute care hospitals to focus increasingly on episodes in the developmental processes in the first and last phases of the human life course. For eldercare this means positioning themselves for a relationship between acute and continuing care.

Given the division of labor that has become characteristic of our developing civilization, this points towards networking or

formal joint ventures at various degrees of formal organization between acute care benefits and other health and human service agencies with their different and complementary specialties. Some may require investment in specialized facilities, as for rehabilitation or health day care; others may require special therapeutic skills, as with professional home health care. Others again, however, may require the supportive person-to-person services that community Councils on Aging are staffed to provide (Nancy A. Persily ed., *ELDER-CARE: POSITIONING YOUR HOSPITAL FOR THE FUTURE*, Chicago: American Hospital Publishing, 1991). It is on these last that this article focuses as one of the new and relatively inexpensive aids to physicians and other healthcare workers, as well as respite-provision for family care givers.

SUMMARY

As care tends to move back from acute care hospital to family home, a useful division of labor between clinical and social support would seem to be emerging in our local communities. Aging members of our species stand to gain as they get help from both sides in their determination to stay active and independent. □

Editorials

I divided my life into three parts: in the first I learned my profession, in the second I taught it, in the third I enjoy it.

SIR BLAND SUTTON

*Even such is Time, that takes in trust
Our youth, our joys, our all we have,
And pays us but with earth and dust;
Who in the dark and silent grave,
When we have wandered all our ways,
Shuts up the story of our days;
But from this earth, this grave, this dust,
My God shall raise me up, I trust.*

SIR WALTER RALEGH

SEASONS

Both of these quotations are taken from my Christmas present of several years ago from Joy Drennen, our managing editor. Knowing my penchant for aphorisms, Joy had found the perfect gift—an anthology.¹ It still brings me delight as, for example, when my family discovered last month that a just-deceased elderly aunt had stipulated that Raleigh's (or Raleigh's) "Even such is Time" be read at her funeral. It was.

The same month, Joy was rummaging through back volumes of *The Journal* when she came across the following from the February 1942 issue:

Dr. and Mrs. Leon S. Bryan are receiving congratulations on the birth of their son at Providence Hospital, Columbia, January 15, 1942.

Whoops—this month's issue marks my 50th—that classic reminder of one's own mortality! Should the subject of this editorial be "Mid-Life Crisis?"

No. I've never made much fuss over my own birthday, and I plan to celebrate this one mainly with an 0.5 cc intramuscular injection of pneumoccal polysaccharide vaccine. I prefer to view such events not as festive occasions but rather as signposts—places to stop and check bearings. I therefore choose for this editorial the theme of one of the most important books I've ever read: *The Seasons of a*

Man's Life, by Daniel J. Levinson and his colleagues at Yale University School of Medicine.²

In brief, Levinson and his colleagues gave us new, basic information about what they chose to call the adult life cycle. The journalist Gale Sheehy "borrowed" the idea and pre-empted them in her best-seller, *Passages*, but it was Levinson who deserves the credit. Appreciating the adult life cycle seems important for at least three reasons: (1) understanding ourselves and preparing for the next season; (2) advising our patients about practical matters; and (3) reinforcing the value of organizations designed to promote discourse among adults of all ages—as do our medical societies.

The Yale researchers chose 40 men of different occupations: 10 executives, 10 factory workers, 10 academic biologists, and 10 novelists. They studied these men mainly by serial, in-depth biographical interviews. The main conclusion was that the fabric of our lives contains a predictable pattern of alternating periods: transition (structure-changing) periods and stable (structure-building) periods.

During the transitions, all of our basic values and commitments are summoned for questioning. These include our jobs; our primary circles (immediate family); our values; our use of solitude; and our relationships with various individuals, groups and institutions.

Consciously or subconsciously, we question the validity of previous choices and consider the options. As each transition comes to an end, choices must be made:

When all the efforts of the past several years are done—all the struggles to improve one's work or marriage, to explore alternate possibilities of living, to come more to terms with the self—a man must make his choices and place his bets. He must decide, "This I will settle for," and start creating a life structure that will serve as a vehicle for the next step in his journey.

Then comes a time to build anew.

During the stable (structure-building) periods, we take on age-specific *developmental tasks*. We must find life structures which are (1) viable for our place in society and (2) suitable for ourselves. No structure is "perfect":

Every life structure provides diverse gains and costs for the man himself, or others for society. The elements that constitute its great strengths are also sources of weakness and take their toll. A structure is never all of a piece. . . . It is always flawed in some respects. It contains contradictions and gaps. . . . The contradictions often have painful consequences, but they may also enrich the process of living and provide an intrinsic basis for change and development.

We build the structure . . . and then along comes another transition!

Between age 17 and age 65, there are five major transitions:

- the early adult transition (17 years to 22 years)
- the age 30 transition (28 to 33)
- the mid-life transition (40-45)
- the age 50 transition (50-55)
- the late adult transition (60-65)

In between, there are four relatively stable, structure-building periods:

- building a young adult life structure (22-28)
- establishing a niche in society (33-40)

- building a first middle adult life structure (45-50)
- building a second middle adult life structure (55-60)

Naturally, all of these age ranges are approximations—plus or minus a few years. However, it was striking that most men pass through such identifiable phases on a quite predictable basis. In summary, "the life structure evolves through a relatively orderly sequence." Let's take a closer look

EARLY ADULTHOOD (Figure 1)

During the early adult transition (17-22—which for most of us were the college years), we imagine our place in the adult world and take our first tentative steps. Entering the adult world, we take on two contradictory tasks: exploring various possibilities while simultaneously seeking stability. Next comes the age 30 transition during which the flaws from the previous life structure must be carefully examined. For physicians, this is likely to coincide with emerging from a residency program and exploring one's options.

The settling down period (33-40) allows one to create a niche in society and to seek promotion or advancement within one's profession. The later years of this period (36-40) were designated the time for "becoming one's own man." One must move toward becoming a senior member of the adult community and a full peer of one's former bosses and teachers. This is a critical phase and—like the other phases of the life cycle—demands crucial choices. On the one hand, we want affirmation. On the other hand, we want independence. If we are to cut ties with restrictive influences from the past and "break out," it is now or never. Younger physicians in group practices, for example, will inevitably ask whether they should strike out on their own.

Perhaps especially relevant to many physicians is the following observation:

Until the late thirties, . . . a man's life is of necessity rather one-sided and imbalanced . . . of the four psychological functions—thought, feeling, intuition, sensation—that all personalities must exercise,

only one or two are likely to have developed much. Although no one develops all four functions to an equal degree, it is possible in middle adulthood to strengthen

the formerly weaker functions and lead a more balanced life.

Hence, younger readers, look forward to your forties!

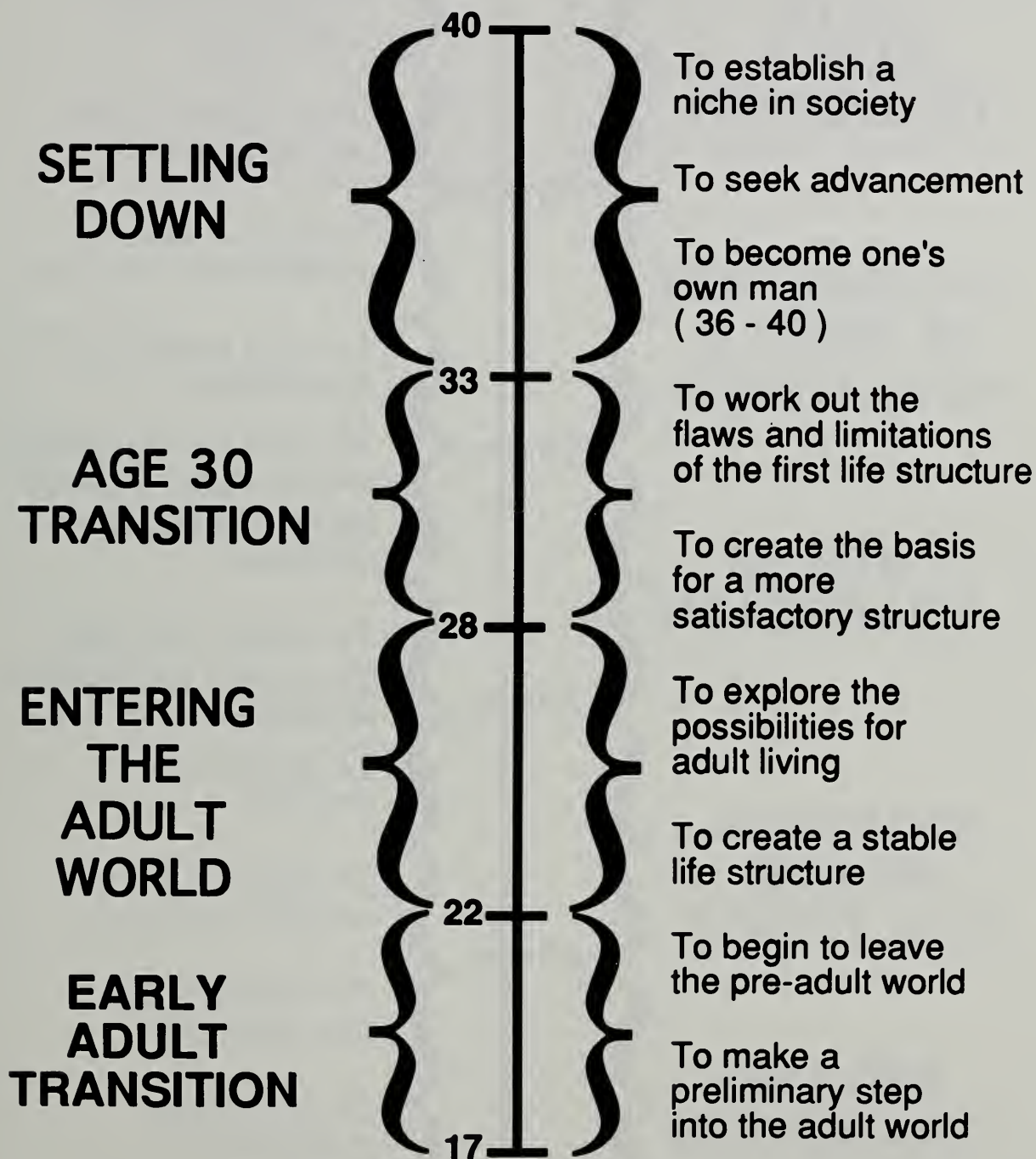


FIGURE 1:. The periods of early adulthood, by age, and their corresponding tasks.

MIDDLE ADULTHOOD (Figure 2)
The mid-life transition (40-45) poses some basic questions:

What have I done with my life? What do I

really get from and give to my wife, children, friends, work, community—and self? What is it I truly want for myself and others?

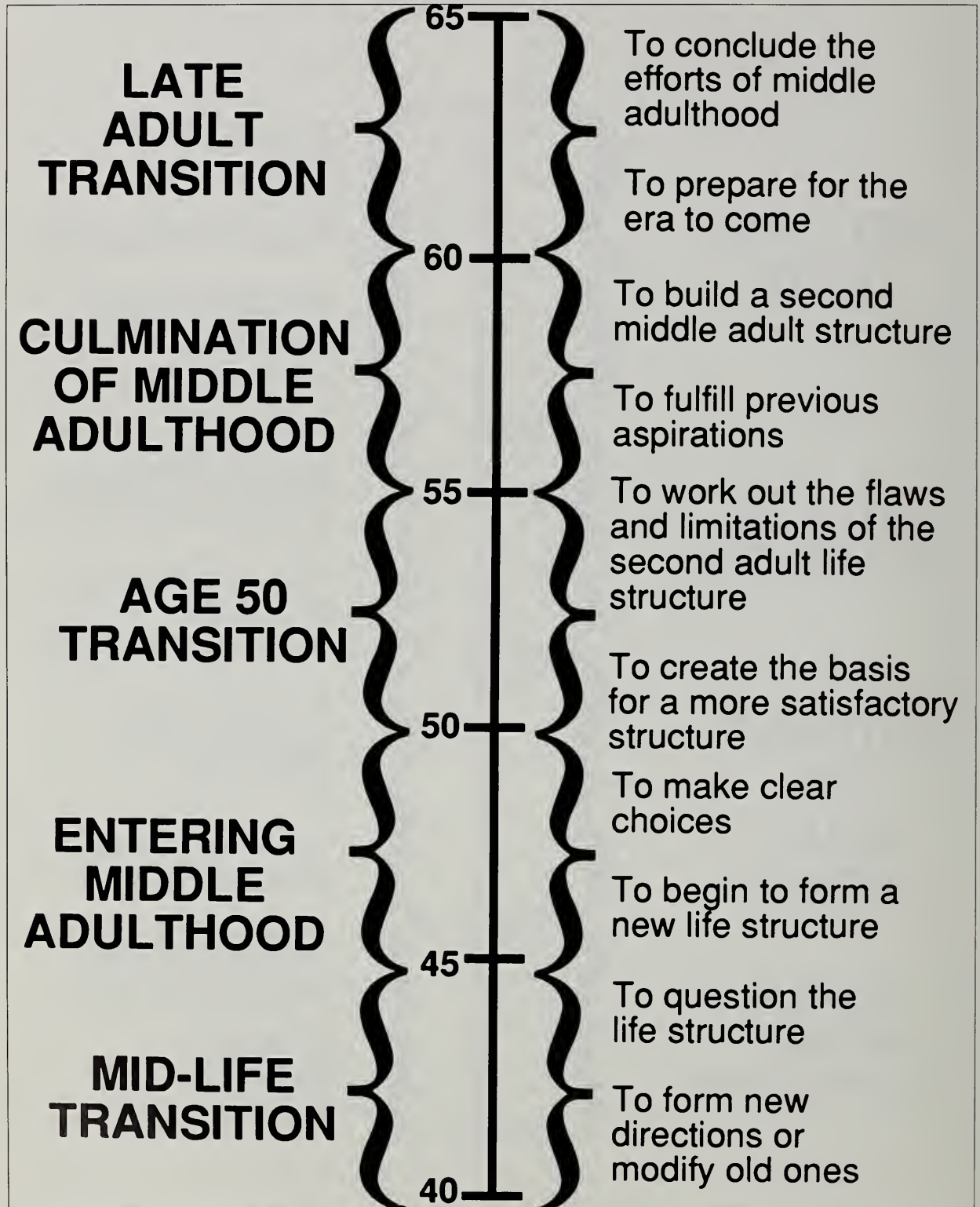


FIGURE 2. The periods of middle adulthood, by age, and their corresponding tasks.

The developmental tasks are questioning the first life structure and its directions. One begins to appreciate one's limitations. One is also likely to experience important losses. One must start to "form an enterprise qualitatively different from those of early adulthood." One works out a second adult life structure—only to face the age 50 transition. Again, one must confront the structure's flaws and limitations and begin to create the basis for a new one. Levinson and his colleagues concluded that "it is not possible to get through middle adulthood without having at least a moderate crisis in either the Mid-life Transition or the Age Fifty Transition." Their work amply confirms the old truism that success is a journey, not a destination.

PERSPECTIVES

We'll stop here. Obviously, there is much more to be learned. Levinson and colleagues did not explore, for example, the life cycle beyond age 65. Elsewhere in this issue is an article by Hardy Wickwar on "Health and Social Support for Aging Clienteles," Hardy, at 88, recently had his eighth book published and is going strong at what (by my count) must be at least his fourth career. Perhaps his ninth book will be the definitive treatise on late adulthood.

Of what utility are these conclusions?

As an individual, I find them of great comfort. They remind me that age—like blood pressure or serum cholesterol—measures an ongoing process of adjustment to life. My "crises" are in no way unique. In fact, they are predictable and I therefore take comfort in my shared humanity. Nearing 50, I rejoice in Levinson's finding that "for men who are able to rejuvenate their selves and enrich their lives, the decade of the fifties can

be a time of great fulfillment." These are my new tasks.

As a physician, I find them invaluable for counseling patients. This is especially the case when patients are referred to me with problems such as the so-called chronic fatigue syndrome which probably reflect, at least in part, maladaptation to stress. Such patients seek a technical solution; I seldom have one. Knowledge of the patient's position in the life cycle helps me understand his or her unique set of stresses and thereby offer at least a measure of empathy and common-sense advice.

As a member of the South Carolina Medical Association, I find these conclusions to be a useful reminder of the value of cultivating friendships with people of different ages. Among the most telling remarks by Levinson and his colleagues is that "close friendship with a man or woman is rarely experienced by American men." I place great value on the friendships I've made through the SCMA. Had it not been for the SCMA, I would never known such state treasures as, for example, Dr. William Hunter of Clemson. Bill, at age 68, not only continues his active practice but also writes a column for the *Anderson Independent-Mail*—a beacon for what I hope to be a reflective period of my own late adulthood, the Good Lord willing.

"Seek the counsel of thine elders!" Is there a finer place to do so?

—CSB

REFERENCES

1. Coope R, ed: *The Quiet Art: A Doctor's Anthology*. Edinburgh & London: E. & S. Livingstone, Ltd., 1952 (reprinted by the University of Alabama School of Medicine, 1988).
2. Levinson DJ, Darrow CN, Klein EB, et al: *The Seasons of a Man's Life* (New York: Alfred A. Knopf, 1978).

LYME, NON-LYME, AND LIME

The lead article of this issue of *The Journal* describes an important finding: *none* of 271 *Ixodes scapularis* ticks removed from hunter-harvested deer in various parts of South Carolina contained the agent of Lyme disease, *Borrelia burgdorferi*.

Ixodes scapularis, the black-legged tick, is the suspected vector of Lyme disease in our part of the country. Well-defined cases of Lyme disease have occurred in South Carolina, but the issue is: how common *really* is Lyme disease in South Carolina? In the August 1991 issue, I suggested that Lyme disease is much less common in our state than "non-Lyme disease," of which there were four clinical syndromes.¹ Before making a diagnosis of late-stage Lyme disease in patients without a history of physician-verified erythema chronicum (the characteristic skin lesion of Lyme disease), one must be careful to define the disease accurately. Serologic tests are fraught with uncertainties including many false-positive results. Therapy for late-stage Lyme disease (ceftriaxone or high-dose penicillin) is extremely expensive.

Dr. Ludwig Lettau of Greenville, SC has written a charming tongue-in-piece essay on "Lime Disease."² He notes:

Recent case-control studies of clusters of Lime disease have shown a weak to moderate association with previous attendance at cocktail parties serving lime-garnished mixed drinks, but very strong associations with recent exposures to others with Lime disease, exposure to media stories on Lyme disease, and exposure to radio or television commercials promoting tick repellants. These types of exposure appear to constitute major risk factors for the development of Lime disease.

Unlike Lyme disease it occurs more often in urban than in rural areas and occurs uniformly throughout the United States. Although treatment is "difficult and controversial," one can refer patients to "Lime disease support groups, which are burgeoning throughout the country. . . ."

We thank Dr. Barton and his colleagues for their important note. What is the true incidence of Lyme disease, as opposed to Lime disease, in South Carolina? Readers, stay tuned!

—CSB

REFERENCES

1. Bryan CS: Non-lyme disease. J SC Med Assoc 87: 433-436, 1991.
2. Lettau LA: Lime disease—United States (ad libitum). Ann Intern Med 114: 602, 1991.



THE INTERIM MEETING OF THE AMA

REPORT OF THE SCMA DELEGATION



DONALD G. KILGORE, JR., M. D.*

INTRODUCTION

The AMA House of Delegates met December 8-11, 1991 in Las Vegas, Nevada. There were 442 credentialed delegates representing 54 states and territories, 81 national specialty societies, five special sections and five government services. The delegates considered 90 reports and 214 resolutions on a wide variety of national issues affecting physicians in the United States. HIV testing for healthcare workers and the development of a national policy regarding the new Medicare payment system were two difficult issues that received the most attention from the delegates and the national press. With over 300 items of business and scores of ancillary caucuses, seminars and conferences, this was a meeting that required much study and preparation for all who were in attendance.

PRESIDENT'S ADDRESS

Our President, Dr. John J. Ring, stated that he was speaking on an historic anniversary. Fifty years ago President Franklin Roosevelt told the nation that the attack on Pearl Harbor had thrown us into a state of war. He mentioned that today he would talk about the fact that our profession has been attacked and finds itself in a state of war. He also stated that he would like to share some observations about how American physicians are winning the wars that we don't want, but can't avoid. He stated it is his firm belief that this profession has two permanent enemies - human disease and human suffering. These are our enemies and we should not forget it. Those who would help us in the battle against these foes are called allies. Those who would block us are not. They are adversaries and very often temporary adversaries; but it is these folks that we must fight most often and the people who would hinder us in our mission. Dr. Ring went on to state that war requires sacrifices. He said that in traveling over the country he found doctors everywhere were willing to make real, personal sacrifices for the sake of their patients and he mentioned three examples of what he meant by sacrifices.

First, he stated that doctors must put more time and effort into regulating their own profession. The ethical standards of which we are so proud must be met, and the profession needs more effective mechanisms to see that they are met. He said, for instance, we must get the FTC to let us take off the gloves of those few bad apples among physicians who indulge in despicable practices. Second, he stated we must take more responsibility for recognizing the part that medicine plays in the higher inflation of healthcare cost. Healthcare cost is the uppermost concern in the public's mind. While we are not entirely responsible for this, we must encourage more cost-benefit analysis, and must educate our colleagues to understand about our responsibility to tell patients about the relationship between cost and care. Third, Dr. Ring stated that even beyond *Health Access America*, we must recognize and acknowledge our responsibility for caring for the poor, whether the government chooses to pay for it or not. He said he was encouraged by the fact that the AMA estimates that two-thirds of all U.S. doctors *do* provide charity care amounting to about 10 percent of their total hours. So, given the realities of medical practice in the 1990's, American doctors are doing a tremendous amount to care for the poor. But we can do more as an organization to divide up the load and assure that everybody in our profession is doing their fair share of caring for the poor. He concluded by saying that we should practice medicine, not war - both in deliberations and in the new year to come.

*8 Memorial Medical Court, Greenville, SC 29605

SOUTH CAROLINA MEDICAL ASSOCIATION ACTIVITIES

Our delegation continued to be a very hard working group, except for Saturday morning when we started at the lazy time of 8:00 a.m. Our days began at 7:00 a.m. and continued far into the night. It was a difficult task to sandwich in the essential work as well as attempt to further Randy Smoak's campaign for election to the Board of Trustees of the AMA.

The delegation included delegates Randy Smoak with Sandra, Don Kilgore with Jean, and Walt Roberts with Nancy. Alternate delegates were Charlie Duncan, Dan Brake with Sue, and Chris Hawk. Also present were Bart Barone, President-elect, with Topsy; Ed Catalano, Chairman of the Board, and Susie; Gerald Harmon and Dina Grice, delegates to the Young Physicians' Section; John Eberly and Wayne Frei who attended the Residents Section; and Jerry Powell, who attended the Hospital Medical Staff Section. Bill Mahon and Barbara Whittaker represented the SCMA staff.

During the meeting we tried to contact many people to help elect Randy Smoak to the Board of Trustees. Our reception held on Saturday night, December 7, 1991, was attended by more than 700 people, and it was felt to be a great success. It should also be mentioned that one of our delegates, Walt Roberts, served on Reference Committee H with distinction. We are proud of you, Walt.

BUSINESS FACING THE HOUSE OF DELEGATES

As mentioned previously, the House of Delegates considered a tremendous amount of business. I will try to summarize some of the salient features. In spite of the large amount of business transacted, there was still a touch of humor here and there. One of the delegates made a comment about the sinful nature of Las Vegas; but another delegate remarked that he had always found Las Vegas to be a family town because he had never seen so many gray-headed fathers with blond daughters. Sometimes the humor arose unconsciously. During a heated debate on the HIV problem, one of the large delegations introduced the following: "Resolved, in order to stop the spread of AIDS, that the AMA adopt a policy of urging all Americans to follow the practice of confining sexual activity to only one partner," whereupon a delegate from Oklahoma said that this one partner, whether it was he, she, or it was going to be exhausted after one or two weeks. A rather embarrassed House of Delegates changed the resolution to read "...urging all Americans to follow the practice of confining sexual activity to a monogamous relationship."

Among the resolutions passed by the House of Delegates that are probably of most interest to physicians in South Carolina are:

Resolution 230 on Student Loan Deferment: It was resolved that the AMA undertake a major campaign to prevent further erosion of the Higher Education Act provisions regarding student loan deferment and forbearance for physicians in training, and that the AMA seek the direct assistance of all appropriate organizations including state and local medical societies, national specialty societies, auxiliaries, medical school deans, faculty residency training program directors, and housestaff associations to galvanize support and to implement a letter writing campaign to Congress to maintain at least the current loan deferment and forbearance allowances for physicians in training. Also, that the AMA continue efforts to persuade Congress to extend deferment of repayments of educational program loans until completion of residency training and to allow up to ten years of forbearance for such educational loans.

Resolution 204 entitled Medicare Fee Discrimination Against New Physicians: It was resolved that the AMA work to have new physicians, as designated by the Medicare program, reimbursed on the same payment schedule as other physicians by continuing to oppose any legislative provisions lowering Medicare payment schedule amounts for new physicians and to intensify efforts in support of measures before

Congress to repeal the current Medicare new physician payment limits. That the delegates to the AMA work with their state and specialty societies to generate support to restore full Medicare reimbursement for services provided by new physicians and that the delegates to the AMA representing specialty societies work to: (1) establish restoration of full Medicare reimbursement for services provided by new physicians as a high priority policy of their specialty society, and (2) have these societies actively promote enactment of this policy. That the AMA intensify efforts in coordinating lobbying activities to eliminate the discriminatory and short sighted Medicare payment differential between "new" and established physicians. That the Board of Trustees report back to the House of Delegates at the 1992 Annual Meeting concerning the efforts to secure full Medicare reimbursement for the services of new physicians.

RBRVS-based Medicare Physician Payment Schedule: Probably the most important item passed by the House of Delegates was the final rule on the new Medicare physician payment system which came out of the Report AAA of the Board of Trustees. As amended by the House of Delegates and adopted, the following recommendations were made:

- That the AMA take the position that the RBRVS-based Medicare physician payment schedule requires substantial improvements in many of its key elements and that the AMA cannot endorse this new system until substantial improvements are made;
- That the AMA publicize and seek to extend HCFA's grace period on the new visit codes an additional two months until April 1, 1992, and that it continue its comprehensive program to educate physicians on the proper use of these codes, and work to ensure that HCFA engages in only educationally oriented profiling and review of these new codes until at least July 1, 1992;
- That the AMA undertake an immediate analysis of the implementation of the new Medicare payment schedule, with a focus on whether carrier implementation is consistent with Medicare law and HCFA regulations, especially with regard to calculation and application of the Adjusted Historical Payment Basis, and that the AMA take whatever steps are needed to correct and alleviate errors in the final schedule;
- That the AMA reaffirm and continue efforts in support of its policy to prevent any further reduction of the current Medicare limiting charges (i.e., balanced billing limits of 140% for evaluation and management services and 125% for all other services);
- That the AMA seek a second Medicare participation decision period between June 1 and July 1, 1992 to allow physicians to reconsider the decision they were forced to make in December 1991 on the basis of often limited information;
- That the AMA expand its efforts to seek replacement of the current flawed proxy data basis for Medicare's Geographic Practice Cost Indexes (GPCIs) with current data that reflect actual practice overhead costs, that the AMA work to ensure that the professional liability component of both the GPCIs and the RBRVS more accurately reflects the actual cost experience of the physicians providing services to Medicare beneficiaries, including specialty-level differences in these costs;
- That the AMA assign a continued high priority to legislative correction of grossly inequitable elements of Medicare physician payment policy such as the lack of any payment for interpretation of EKGs, discriminatory payment reductions for new physicians, unfounded payment limits for the services of assistants in surgery, definition of "new" patients, and the discriminatory 50% copayment for mental illnesses.

- That the AMA establish a comprehensive program to monitor changes in patient access, physician practice patterns, and errors in carrier implementation under the new Medicare physician payment schedule working closely with state and county medical societies, and that the AMA work with the Health Care Financing Administration to correct all identified deficiencies in this program;
- That the AMA seek to achieve adequate funding for Medicare carriers as they implement the RBRVS;
- That the AMA work with HCFA and the national medical specialty societies to clarify HCFA's new global payment policy and to disseminate accurate information to physicians on these policies;
- That the AMA Board of Trustees study and report to the House on the status and background of the "behavioral offset" and the "baseline adjustment" with an emphasis on the history of the use of these adjustments in Medicare Part B, including the applications to the RBRVS conversion factor and the MVPS;
- That the AMA intensify its Payment Reform Education Project to provide all possible assistance to physicians as they adjust to and cope with the new Medicare payment schedule and that it evaluate the initial implementation of the payment system, soliciting input from the entire Federation, and commenting, as appropriate, to HCFA as part of the 120-day comment period on the relative values for the new system and as otherwise appropriate.

In related actions, the House stated the sole purpose of medical licensure is to assure the competence of physicians to practice medicine and voted to "oppose any attempt to tie up medical licensure to a physician's obligation to take part in any payment system or plan, including Medicare."

HIV/HBV and Physicians: After a long and thoughtful debate, the House referred some suggested modifications of the Report of the Board of Trustees for its consideration and adopted the following recommendations contained in this report.

- *Infection Control Procedures.* All healthcare workers including physicians should observe universal precautions and proper infection control guidelines. Hospitals should establish procedures to see that these precautions are strictly enforced and that educational programs covering proper infection control procedures are available for all healthcare workers.
- *HIV-Infected Physician.* Any physician who performs exposure-prone procedures should voluntarily determine his or her serostatus on a frequency appropriate for the risk. The periodicity will vary according to locale and circumstances of the individual and judgment should be made at the local level. A physician who tests negative for HIV should voluntarily determine his or her HIV serostatus at an appropriate period of time after any significant occupational or personal exposure to HIV. Follow-up tests should occur after a time interval exceeding the length of the "antibody window."
- Another recommendation is that a physician who performs exposure-prone procedures and becomes HIV-positive should disclose his or her HIV-infected status to a local review panel as defined in previous AMA policy. The local review panel should establish practice limitations, if any, for all HIV-infected physicians. The panel might consider the following when determining what the practice of an HIV-positive physician will be. First of all, morbidity and mortality experience of the physician in question. Secondly, the frequency with which the physician performs the following: (a) procedures which have been associated with injuries to physicians in the course of surgery; (b) procedures which are conducted in confined or difficult to visualize anatomical spaces; (c) procedures where a physician's blood is likely to come in contact with a patient's mucosal surfaces, open surgical wounds or blood stream; and (d) procedures which have been known to be involved in HBV transmission. The AMA recommends that for those groups who feel the need to implement

specific restrictions, they may wish to consider using the HBV model as a surrogate. However, it should be recognized that HBV is 100 times more transmissible than HIV.

- The local panel should be empowered to monitor the HIV-infected physician for compliance with any practice limitations established by the committee, advise the physician on the need to inform patients of his or her HIV status, monitor the infected physician's compliance with universal precautions, and assess the effects of the disease on physician competence as AIDS progresses. Physicians and others who participate in making these decisions must be protected from legal challenges and personal legal responsibility.
- The AMA recommends that any HIV-infected physicians who repeatedly violate local committee-imposed practice limitations and/or universal precautions, be reported to state licensing boards for possible discipline.
- An HIV-infected physician should refrain from doing exposure-prone procedures or perform such procedures with permission from the local review panel and the informed consent of the patient.
- That the AMA reaffirm its previous policy and remain opposed to mandatory testing.
- That the AMA reaffirm its opposition to mandatory reporting of HIV and HBV-infected physicians to state licensing boards until there is conclusive evidence that such infected physicians pose a significant or measurable risk to patients.
- The AMA recommends that educational programs covering practical and didactic aspects of universal precautions and infectious control procedures be conducted for all healthcare workers and especially for physicians who practice invasive procedures.
- That the AMA reaffirm its policy that all HIV-positive people, including physicians and other healthcare workers, be confidentially reported to the state boards of health.
- That the AMA remain opposed to HIV testing as a condition of hospital medical staff privileges.
- That the AMA should open dialogue with the professional liability insurance companies to explore issues surrounding HIV-infected physicians and liability coverage. These discussions should include the position that to date there are no scientific grounds to require testing of physicians for HIV serostatus.

Office Verification: That the AMA explore the feasibility of developing a voluntary office visitation program to assess the policies, procedures and educational programs that are in place concerning the prevention of HIV and HBV transmissions. This effort would include exploring the feasibility of developing minimal guidelines for physicians' offices.

Confidentiality: The confidentiality of the HIV-infected physician should be protected as with any HIV patient.

Education: The AMA should continue and enhance its campaign to educate patients on the extremely small risks of iatrogenic HIV infection. Public education should include information about the route of transmission, the effectiveness of universal precautions and the efforts of organized medicine to ensure that patient risk remains immeasurably small. This program should include healthcare worker education, as appropriate, and methods to manage patient concern about HIV transmission in medical settings.

Research: The AMA should encourage further research to assess the risk of HIV transmission in specific surgical techniques and how any such risk may be decreased: the frequency of healthcare worker cuts and punctures, subsequent healthcare worker blood contact with the patient, and other possible avenues that might support infection transmission. Additionally, cooperation of the medical community and patients should be encouraged in scientifically sound look-back studies designed to further define the risk of HIV transmission from an infected doctor to a patient, and to determine if there is any scientific basis for the development of a list of exposure-prone procedures.

Healthcare Workers' Safety: Employees of the healthcare system who might be at risk of contacts with infected fluids (e.g., blood bank technicians) should be afforded the protection suggested by OSHA and at a minimum, universal precautions must be utilized by all personnel working in blood banks. The AMA will analyze and evaluate the newly released OSHA "Bloodborne Pathogens Standards" concerning its impact on physicians, physicians' offices and health institutions.

Patient Protection: When the scientific basis for patient protection policy is unclear, the physician must err on the side of protecting patients.

CDC: That the AMA continue to work with the CDC in the management of the AIDS epidemic.

OTHER BUSINESS

There was too much business transacted to cover in this short report but a few other examples will give you an idea of some of the important issues that were addressed. First of all, there was a resolution on conflicts of interest - physician ownership of medical facilities. New guidelines recommend that physicians should not refer patients to a facility in which the physician has an investment interest unless there is a demonstrated need in the community for the facility *and* alternative financing is not available. Even in limited exceptions, investment must meet specific ethical considerations. Physicians who already invest should re-evaluate and comply with new guidelines "to the fullest extent possible."

Another item was *Health Access America*, a report containing several refinements to the AMA's proposal, that has as its goal the provisional quality of medical care to all Americans. The adopted policy favors addressing the cost problem with a market system rather than a centrally controlled budget system.

Another item was sexual harassment - prevention and medical information. There was a resolution urging that the AMA guidelines for establishing sexual harassment prevention and grievance procedures be implemented in all U.S. medical schools and residency programs by 1993.

Finally, on the National Practitioner Data Bank, a resolution calling for an analysis and report on the activities of the data bank was adopted and then amended to ask the AMA to seek to abolish the data bank.

There were many other issues of critical importance addressed at this meeting. The meetings of the AMA House of Delegates are conducted in a most fair and democratic manner. They provide those who attend a unique educational experience as a wealth of information is disseminated and discussed. One of the things that has always impressed me about the AMA is that reference committees are open to all physicians who wish to speak and not just members of or delegates to the AMA. Frequently, people who are not even physicians are allowed to speak before the reference committee and express their views. In fact, I have never seen anybody refused an opportunity to speak before a reference committee. I appreciate again the opportunity of serving as a delegate from South Carolina to the American Medical Association and hope that all of us have represented your viewpoints in a manner that you would find pleasing and satisfactory.

Letters to the Editor

To the Editor:

In your excellent overview of sinusitis in the October 1991 issue of *The Journal* (Sinusitis: More Than a Headache, *Journal of the SCMA*, 87, 10:517), you conclude with a question regarding what role sinuses were meant to play. To the best of our current knowledge, the primary role of sinuses is to add resonance to the human voice.¹ It is certainly a justifiable question for all the trouble they seem to cause.

Respectfully,
RAM KALUS, M.D.
USC School of Medicine
Division of Plastic Surgery
Two Richland Medical Park
Suite 300
Columbia, S.C. 29203

REFERENCES

1. Gray's Anatomy, 36th British Edition, W. B. Saunders Co., pp. 1148.

In Response:

I thank Dr. Kalus for his comments. It has also been suggested that the Good Lord gave us paranasal sinuses in order to make the skull lighter.

—CSB

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Views expressed herein are those of the authors only and in no way represent the SCMA. We do not give tax advice. Only your attorney and accountant are qualified to do so.



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On the Cover:

FLORENCE WAYSIDE HOSPITAL

At the outbreak of the Civil War, there were in South Carolina only four hospitals, three in Charleston and the State Hospital for the Insane in Columbia. Shortly thereafter, women of the various communities formed associations and societies whose purpose was to provide food, clothing and medical aid to the soldiers passing through their area. This was done in a variety of homes, churches and other available buildings. One of these was the Florence Wayside Home. Located in the Norris Building on the corner of Front and Coit Streets, it was supported by the women of Florence, Darlington, Society Hill, and Cheraw. When the number of sick and wounded became too great for the volunteers to take care of, the home was turned over to the Confederate Government and became a Wayside Hospital. Dr. Theodore Dargan of Darlington was Surgeon-in-Charge with Dr. P. B. Bacot as his assistant. Some time after the war, Mrs. C. E. Jarrott wrote the following reminiscence of the hospital.

In the sixties when Florence was only a station with three or four houses, a hotel and an old two-story building used as a store of some kind, the said store was converted into a "Wayside Hospital" where very sick soldiers were placed for treatment when taken from the trains.

The lower and upper floors had bedsteads (some of them made of pine) and the bedding was contributed by our devoted Southern women. Miss Harriet Black was Matron, and I think gave her time and attention without remuneration. She may have had some women to assist, in fact I saw a humble country woman doing drudgery. Dr. James Howard Jarrott, Dr. Peter Bacot and Dr. Theodore Dargan gave all the time they could spare to alleviate the suffering of those men.

I used to come from Cheraw with my mother at stated times, with a basket of the best nourishment we could procure, and

distribute it to those who were able to receive it. There were regularly appointed committees of ladies to visit in turn for the same purpose. The wives of the planters would drive for miles with contributions of provisions and covering for the beds and whatever they could get for the comfort of those suffering men.

Some of them died of gangrene, of fever and of amputation. I saw a young lady (Miss Sallie McLean who afterwards married Major Coit) kneel by the bed of a dying boy and pray for him. The Bible would be read and letters written for them.

The doctors at that time had the greatest difficulty in getting drugs of any kind, especially narcotics to ease their suffering. Many of those men died and were buried in a pit in Presbyterian Church Yard, at that time the only cemetery in the place, but their bones have been removed to Mt. Hope Cemetery and the monument placed in the lot given by Mt. Hope Association. They were buried and no record kept of their names and homes at the hospital that has ever been known. Perhaps their families never knew what became of them.

(Used courtesy of Miss Leola Settle, Waycross, GA.)

BETTY NEWSOM
The Waring Historical Library

ERRATA. The October cover story on Dr. James Higgins McIntosh contained two errors. Dr. McIntosh served on the draft board in World War I and died on September 2, 1944. Courtesy: Mrs. J. T. (Nancy McIntosh) Pearlstine.

American Academy of Allergy and Immunology. American Academy of Dermatology. American Academy of Facial Plastic and Reconstructive Surgery. American Academy of Otolaryngology-Head and Neck Surgery. American Academy of Pediatrics. American Academy of Neurology. American Academy of Orthopaedic Surgeons. American Academy of Physical Medicine and Rehabilitation. American Association of Neurological Surgeons. American College of Emergency Physicians. American College of Nuclear Physicians. American College of Obstetrics and Gynecology. American College of Radiology. American College of Surgeons. American Dental Association. American Osteopathic Association. American Psychiatric Association. American Society for Laser Medicine and Surgery, Inc. American Society of Anesthesiologists. American Society of Internal Medicine. American Society of Plastic and Reconstructive Surgeons, Inc. American Urological Association, Inc. College of American Pathologists. Council of Medical Specialty Societies.

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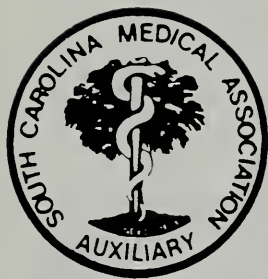
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Auxiliary Page

AMA AUXILIARY LEADERSHIP CONFLUENCE

The AMA Auxiliary Leadership Confluence was held October 6-8, 1991, at the Drake in Chicago. Six South Carolina Medical Association Auxiliary members attended Confluence, which is a leadership training meeting for state and county auxiliary president-elects. Those attending were kept constantly busy with seminars which gave us an excellent overview of the information we need to be presidents. The representatives from South Carolina were Mrs. J. Michael Grayson (Hope) from Charleston, the SCMAA president-elect, and the following County president-elects: Mrs. Anthony E. Harris (Sandy) from Aiken County, Mrs. Gary A. Delaney (Gail), Edisto-Orangeburg, Mrs. Mark Visk (Kristin), Spartanburg, and Mrs. James Robbins (Susan), Greenville. Also, Mrs. Lewis Terry (Betsy) from Greenville, attended as a member of the AMAA Health Promotion Committee.

Those attending Confluence heard speeches by the AMA Auxiliary President, Mrs. Gary Strebel (Sherry) and President-Elect, Mrs. S. Bruce Gerber (Priscilla). Excellent seminars were held on topics such as membership, programs, time management, publicity, and listening skills. After two days of seminars, our heads, as well as our hotel rooms, were overflowing with ideas, and handouts.

The keynote speaker on Sunday night was Sara Weddington, attorney in the case of Roe vs. Wade, who gave an inspirational talk about leadership.

Monday night there was an "Idea Fair" with displays and handouts from the national committees, such as AMA-ERF, Legislation, Membership, and health promotion. Another night, each state auxiliary had a display. We saw that our state auxiliary has many wonderful programs, and certainly compares favorably with those around the country.

John J. Ring, M.D., President of the AMA, spoke to us on Monday morning, and later we had a legislative update, featuring Ross Robin, Vice-President, Legislative Activities, AMA in Chicago, and Leslie Ludwick, Assistant Director, Division of Congressional Affairs, AMA in Washington, D.C. Both of these speakers provided much useful information about what is going on in healthcare legislation.

A stirring multi-media presentation on "Violence in America" led later to other programs on healthcare issues, such as Respite: Care of the Elderly, Teen Sexuality, the Environment, and Family Violence. "Violence in America" will be a major concern of the AMA Auxiliary this year.

Those attending Confluence left with many ideas to bring home and use in their terms as state and county auxiliary presidents. We appreciate the work done by the AMAA and appreciate the opportunity provided by the AMAA and SCMAA to attend and receive the valuable training.

SUSAN ROBBINS
President-Elect
Greenville County Auxiliary

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President's Page

SMOKING: THE PHYSICIAN'S ROLE

Since the Surgeon General's landmark report on smoking in 1964, we have made tremendous progress. The prevalence of cigarette smoking among adults has steadily fallen from 50 percent to 28 percent. Per capita cigarette sales have declined, and smoking is no longer socially acceptable. Even the VA Hospitals have a smoke-free policy! However, 50 million Americans continue to smoke, and more than 400,000 die each year from diseases related to smoking. Smoking is the leading cause of preventable death in this country.

Can we attain the goal of a smoke-free society by the year 2000? Yes, but only if the "War Against Tobacco" heats up. The tobacco industry spends \$3.5 billion promoting its product and has targeted youth, women and minorities to replace the 3,000 smokers who quit or die each day. Ninety percent of all smokers start before age 21. The Old Joe Camel cartoon and other advertisements aimed at our youth are succeeding.

Physicians and organized medicine should support legislation and policies designed to control and prevent tobacco use. We have successfully supported the Clean Indoor Air legislation. Last year the SCMA sponsored a bill to increase the cigarette tax, but it failed. At seven cents per package, our tax rate is one of the lowest in the country (range: 2.5 to 45 cents per package). We need to continue these legislative efforts. Perhaps it's appropriate to ban cigarette advertising completely and put some teeth in the regulation which outlaws the sale of tobacco to minors.

What is the individual physician's role? Consider these facts:

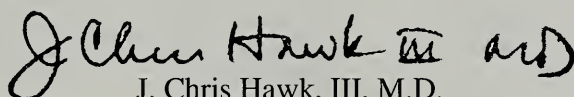
- One survey has shown that over 60 percent of smokers would seriously try to stop if their personal physician recommended it and supported their effort.
- Only 50 percent of smokers have been advised by their physician to stop smoking.
- Physician counseling against smoking can be successful and is as cost-effective as other preventive medicine practices.

South Carolina is one of 17 states receiving a NCI grant for a seven-year joint DHEC-American Cancer Society program called ASSIST (American Stop-Smoking Intervention Study). The AMA is launching a major campaign called "Stop For Good," which will emphasize the positive effects of smoking cessation for the patient. National and local media coverage will be substantial, and educational materials will be available for our offices. If physicians participate in the effort, at least 38 of the 50 million U.S. smokers can be reached annually.

Smoking cessation is a process, with the patient progressing from the stage of being uninterested, to considering the possibility, to making a real effort, and finally to total abstinence. Most people require several attempts. Studies show that one to two minutes of simple physician advice can increase success rates significantly.

Although I have not been formally trained in smoking cessation techniques, I make it a regular part of my practice to encourage patients to stop smoking. "It's the single most important thing you can do for your health." If their illness is severe enough, I strongly encourage them to stop. In fact, I don't have a single patient who has undergone resection for lung cancer who has continued to smoke.

As you hear more about the AMA and ASSIST programs, I encourage you to participate. Make it a habit; encourage your smoking patients to break the habit. Our role as physicians is clear. Can we count on you?


J. Chris Hawk, III, M.D.
President

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Charles S. Bryan, M.D.
SCMA, P.O. Box 11188
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CHRONIC FATIGUE SYNDROME: A DEPRESSIVE DISORDER*

EDMUND S. HIGGINS, M. D.**

Fatigue is a common presenting complaint to primary care physicians, accounting for seven to nine percent of all office visits to family physicians.¹ The cause is not always easily diagnosed. Many epidemics of unaccountably prolonged and debilitating fatigue with few significant physical or abnormal laboratory findings have been reported. Since the 19th century, different names have been given to what seems to be the same condition: neurasthenia, chronic brucellosis and chronic candidiasis to name a few. The search for a pathophysiologic explanation for this confusing condition has remained elusive.

Chronic fatigue took on a new meaning with two reports in 1985 describing persistent fatigue associated with evidence of Epstein-Barr virus infection.^{2,3} Both reports described elevated titers of antibodies to the viral capsid antigen and/or early antigen of Epstein-Barr virus in patients with chronic illness and fatigue. It was suggested that the illness was the result of reactivation of the Epstein-Barr virus as can happen with other herpes viruses.

Since 1985, the evidence has not supported the belief that Epstein-Barr is the pathogen of chronic fatigue, but interest has remained high in the search for a specific viral etiology. In an effort to provide some uniformity to this confusing illness, Holmes et al from the CDC published a working case definition and called the illness Chronic Fatigue Syndrome (CFS).⁴ Since immunologic changes are not consistent in patients with the illness and a specific pathogen has not been identified, they were not included in the case definition (See Table One).

There has been considerable interest in the lay media about CFS. Most of the focus of the attention has been on "the medical establishment's indifference to problems that defy comfortable assumptions."⁵ Another point of interest in the lay media is stressing that CFS is a "real" illness. On October 1st, 1991, Eadie Magnus, the health correspondent for the CBS Nightly News, ended her report on a new treatment for CFS by saying these results proved CFS "is a disease of the body, not a disease of the mind." One article published in Charleston, South Carolina in the *News and Courier* on CFS cited a case example which the author believed was typical of the illness.⁶ While this case was not written by a physician or for scientific literature, it is informative to read

* From the Department of Family Medicine and the Department of Psychiatry and Behavioral Sciences, Medical University of South Carolina, Charleston.

** Address correspondence to Dr. Higgins at the Department of Family Medicine, Medical University of South Carolina, 171 Ashley Avenue, Charleston, SC 29425-5820.

TABLE ONE
CASE DEFINITION OF
CHRONIC FATIGUE
SYNDROME

The Syndrome = both major criteria plus either six or more symptoms and two signs, or eight or more symptoms.

Major Criteria:

1. Persistent fatigue.
2. Other conditions have been excluded, including preexisting psychiatric diseases.

Minor Criteria: must have been present greater than six months.

Symptoms:

1. Mild fever (37.5° C - 38.6° C).
2. Sore Throat.
3. Cervical or Axillary lymph node pain.
4. Muscle weakness.
5. Myalgia.
6. Prolonged fatigue following exercise.
7. New Headaches.
8. Arthralgia: noninflammatory.
9. Neuropsychological symptoms.
10. Sleep disturbance.
11. Acute on-set of symptoms.

Signs: documented by a physician twice, one month apart.

1. Low grade fever (37.6°C - 38.6°C oral).
2. Nonexudative pharyngitis.
3. Palpable or tender cervical or axillary lymph nodes.

what a patient spontaneously reports to a journalist. Mrs. M is a married mother of two, who works as a rural mail carrier.

"Out of the blue, she became dizzy and nauseated in March of 1986. *She lost 23 pounds* in four months and went from one specialist to another in search of an explanation for her fatigue, headaches, stomach problems and *inability to concentrate*. When she got tired, she would

lose motor control, drag one foot or even fall. In March of this year, the syndrome finally was diagnosed and she gained some relief from her symptoms.

When one test after another came up negative, doctors acted as if the problem was in her head.

'Many, many, many physicians feel this is psychosomatic,' says her husband of 18 years, attorney Mr. M. A test and a list of criteria enable physicians to diagnose the syndrome, which is indeed a physical illness, Mr. M points out. In Charlotte, Mrs. M found an expert who could put a name to her malady.

In Mrs. M's three-year search for a diagnosis, one local physician prescribed lithium and sent her to a psychiatrist. Mrs. M acknowledges *she became depressed*, depressed after months of exhausting, painful illness without relief or answers. 'I felt if I did not get help, I was not going to make it.... This is a serious thing. Unfortunately a lot of people do not think so. We have been through every life-threatening disease. There have been some very hard times when *suicide was possible* and I've had to take precautions.'

After a test for Epstein-Barr, she was referred to Dr. Paul R. Cheney, a Charlotte specialist in chronic fatigue and medical consultant to the *CFIDS Chronicle*, the journal of the Chronic Fatigue and Immune Dysfunction Syndrome association. Under his direction, she gives herself B-12 shots twice a week and takes low doses of the antidepressant *Klonopin* to clear her mental foggyiness, *Sinequan* to ease her sleep disturbance, *Prozac* each morning to counter the other two medications and a vitamin to offset the Sinequan.

She feels better as a result, can work full days on her mail route and take part in the local chronic fatigue support group."

The above is taken directly from the *News and Courier* but I have added the italics to show that Mrs. M meets the DSM-III-R criteria for Major Depression (five of nine symptoms). She is being treated with two

antidepressants and one anxiolytic, and her condition is improving. Note that this patient's major complaints are neuropsychiatric and we hear nothing about symptoms suggestive of infection, i.e., sore throat, fever or enlarged lymph nodes. Also it is not unusual for patients with CFS to be enthusiastic about the "organic" aspect of the disease while being angry or defensive about any psychiatric implications. I will try and show why these reactions by this patient and the lay media are not supported by the medical literature.

DEPRESSION IN PATIENTS WITH CFS

Other researchers have confirmed the high prevalence of depressive disorders in patients with CFS. Four studies have been done which used the Diagnostic Interview Schedule of the NIMH, a highly structured interview designed to promote accurate psychiatric diagnoses, looking for psychiatric problems in patients with chronic fatigue. Taerk,⁷ Manu⁸ and Kruesi⁹ found between 56 and 71 percent of the patients they interviewed with chronic fatigue met the criteria for either Major Depression or Dysthymia. Gold¹⁰ found that 73 percent of the patients with chronic fatigue had an episode of Major Depression in their life time while only 22 percent of the control patients did. However, many will argue that the depression found in CFS is a result of the fatigue (as Mrs. M does above) rather than a cause.

The "chicken and egg" dilemma in relation to mood disorders and medical illness was being discussed in the late 1950s around the delayed recovery of some patients with acute brucellosis, which was being called chronic brucellosis. Imboden showed that the delay in symptomatic recovery from the disorder was dependent on the emotional state of the person and not on any difference in clinical or laboratory findings. Then as now it was unclear if the depression was the cause or effect of the chronic condition. To resolve this Imboden did the following study, prior to an anticipated Asian influenza epidemic in 1957.¹¹ Six hundred employees at Fort

Detrick were given psychological examinations and told to report to the dispensary in the event of any kind of illness. All those who reported with apparent influenza were followed up in three to six weeks. Of 26 persons with influenza-like syndrome who reported that winter, 12 remained symptomatic after three to six weeks and 14 completely recovered. Of those who remained symptomatic the major complaint was of being "tired and/or weak" (10/12). Those who remained symptomatic were no different at the time of the acute illness from those that recovered. The two groups were different in that the symptomatic group had significantly higher indices of depression as measured by the MMPI prior to the infection. This is one of the few prospective studies to show that persistent fatigue following an infection is related more to the premorbid affective condition than it is to severity of the infection.

LABORATORY ABNORMALITIES IN PATIENTS WITH CFS

Much of the interest in CFS revolves around the abnormal laboratory findings that have been found in some patients with CFS. As noted above, the initial reports of CFS described patients with persistent fatigue and elevated titers to Epstein-Barr virus. Epstein-Barr virus has not proven to be a reliable explanation for CFS, but the prospect of a different viral cause for CFS has stimulated considerable excitement in the medical literature. Other studies have suggested human herpesvirus-6 or enteroviruses as possible causes of CFS. But as with Epstein-Barr virus, further studies have failed to distinguish controls from patients with either human herpesvirus-6 or with enteroviruses.¹²

In their extensive review of the topic funded by the National Institute of Allergy and Infectious Diseases, Buchwald and Komaroff cited 60 studies in their analysis of abnormal laboratory findings for patients with CFS.¹³ They compiled studies in eight areas of abnormal quantity or function. These included hematology, immunology,

autoantibodies, lymphocytes, natural killer cells and Epstein-Barr serology. They combined studies into what they called a pooled average. So if one study found 50 percent of patients with CFS had the abnormality while a second study showed zero percent had the finding, then the pooled average would be 25 percent. The number of patients in each study was used to properly weight the pooled average. This method of analyzing many studies does not take into account that some studies are well designed while others are questionable, but it does allow for an overview in this confusing area. No abnormality which has been studied more than twice has a pooled average of greater than 53 percent of patients when compared to controls. This is typical of the trends in the studies of CFS. One or more researchers will initially report a finding which later cannot be repeated by others.

One finding that seems more consistent has been natural killer cell function. Three studies had a pooled average of 77 percent. In other words, 77 percent of patients with CFS had a decrease in the function of their natural killer cells when compared to controls. This is important, as we will see below. In their summary Buchwald and Komaroff state that the studies are "diverse, sometimes conflicting, and frequently modest in degree." They go on to say, "in general, the abnormalities we find most impressive are those involving the immune system. There is evidence of diffuse immunologic dysfunction." Even if there is evidence of diffuse immunologic dysfunction it should be remembered that the magnitude of the abnormalities are small when compared to classic immunologic disorders, and that no opportunistic infections occur in patients with CFS. Could it be that the abnormalities in the immune system are a reaction to something other than an infection?

LABORATORY ABNORMALITIES IN PATIENTS WITH DEPRESSION

There is a well-established association between "stress" and mental or physical

problems. With the development of increasingly sophisticated measurements of immunologic function, there has been a new focus on assessing immunologic function in stressful situations. This has resulted in the development of a whole new field called Psychoneuroimmunology. Stein et al recently published a review of studies about immunology and depression.¹⁴ They looked at 22 studies published since 1978 which assessed cellular enumeration, mitogen induced lymphocyte stimulation or natural killer cell function in depressive disorders. They concluded that "immune changes in depressive disorders have not been as clear-cut as the early studies suggested." The exception to this conclusion was with natural killer cells. Seven studies were reviewed which assessed natural killer cell function and five found significant differences between patients with depressive disorders and controls. This is particularly interesting because natural killer cells are involved in the recognition and destruction of virus-infected cells. Bukowski et al showed that mice injected with certain viruses, after having their natural killer cells depleted, had significantly higher titers (up to 500 fold) of the viruses in their livers and spleens.¹⁵ Could it be that CFS and major depression are both caused by a virus?

Not discussed in the above review by Stein is the extensive work with Epstein-Barr virus and "stress" or depression, which is of particular interest because it was Epstein-Barr virus which generated the initial excitement about CFS. Evans, in his discussion on the pathogenesis of CFS, describes four studies that show increased titers of antibodies to Epstein-Barr virus (viral capsid antigen) in patients with new headaches, those who cared for Alzheimer's patients, who are aged and in women recently divorced or separated.¹⁶

Pitts et al looked at antibodies to Epstein-Barr virus in depressed patients.¹⁷ Compared to controls, patients with major depression by DSM-III criteria, had significantly higher titers to viral capsid antigen and early antigen (595 and 63 for patients compared to 325 and

15 for controls respectively.) In a secondary study the authors did a similar analysis comparing 212 consecutive patients with major depression seen in a private psychiatric practice with 300 consecutive patients referred to a Chronic Epstein-Barr Virus clinic. It should be pointed out that the patients at the viral specialty clinic were not evaluated to see if they met the case definition for CFS. Greater than 95 percent of the patients in both groups had antibodies to early antigen. Additionally, 93 percent of the patients referred to the Chronic Epstein-Barr virus clinic met the DSM-III criteria for major depression. In spite of this "nearly all of this group steadfastly denied depression while complaining of exhaustion, weakness, polyarthralgias and polymyalgias, band-like headaches, tinnitus, sleep disturbances, anergia with diurnal variation, anorexia, and/or hyperphagia."

NEUROBIOLOGY OF DEPRESSION AND CFS

There has been considerable evidence accumulated over the past 30 years about the neurobiology of depression. Gold et al reviewed this topic in 1988 in *The New England Journal of Medicine*.¹⁸ They described several neuropathological processes which could be causing the symptoms of the affective disorders. Probably the best known theory is the neurotransmitter hypothesis which proposes that major depression is the result of a deficit of norepinephrine, serotonin or other neurotransmitters at critical sites in the central nervous system. It is believed that antidepressants work by increasing the effect of the reduced neurotransmitter at the synaptic site. Other neurobiological explanations for major depression include the circadian rhythm hypothesis, the kindling-sensitization hypothesis and the neurohormonal hypothesis. This last hypotheses is of particular interest because it is based on the repeated findings of dysfunction of the hypothalamic-pituitary-adrenal axis in patients with major

depression. In December of 1991 Gold's laboratory at the Clinical Neuroendocrinology Branch of the NIMH published work showing dysfunction of the hypothalamic-pituitary-adrenal axis in patients with CFS.¹⁹ Their work demonstrated an abnormal ACTH response to ovine CRH in patients with CFS. This response has been seen in only three other conditions: major depression, anorexia nervosa and in the early period after curative surgery for Cushing's disease. The authors go on to state that when the entire endocrine abnormalities are taken into account, the whole picture more closely resembles the depressed phase of seasonal affective disorder. This amazing discovery suggests that CFS and depression are not just similar in their signs and symptoms, but also in their neurobiology.

ANTIDEPRESSANTS

Like the case example above, antidepressants are frequently used to treat CFS. Several anecdotal reports have appeared which have described beneficial results from low-dose antidepressants.²⁰ In spite of the wide use of antidepressants for CFS, no controlled studies have been done yet. I believe this is in part due to misguided enthusiasm about immunologic or viral causes of the illness, but may be related to patients' aversion to psychiatric medications. Buchwald et al in their review of CFS dedicate a separate section of their article to overcoming resistance to antidepressant therapy because "patients with chronic fatigue often have difficulty accepting that they are depressed and may refuse pharmacologic therapy."²¹ They suggest presenting the depression as a symptom of the illness, describing depression as an organic illness and/or letting the patient be the first one to bring up the depression.

Controlled studies have been done with antidepressants and fibromyalgia, a very similar illness. Fibromyalgia and CFS are both syndromes which consist of diffuse pain, sleep disturbances and depression all without objective evidence of pathology. Goldenberg et al found that fibromyalgia patients taking

25 mg of amitriptyline had significant improvement in all outcome parameters, including global assessment, pain, sleep, fatigue and tender points when compared to controls.²² Carette et al compared 50 mgs of amitriptyline to placebo and found significant improvement in global assessments by patient and physician, decreased pain and improved sleep in patients who received amitriptyline.²³ These studies suggest that patients with fibromyalgia, and by extrapolation patients with CFS, can be helped by treatment with antidepressants.

CONCLUSION

CFS is not a new illness, but rather a new interpretation of old symptoms with modern tools. In this age of AIDS, with both its viral cause and immunologic effects, it's no wonder that confusing syndromes like CFS are re-evaluated for possible infectious etiology or reactions. However, the extensive search has not identified an agent or reaction that can be consistently demonstrated in patients, but not controls. On the contrary the evidence seems to point more towards an affective disorder than it does toward an infectious etiology (See Table Two). Patients with CFS and patients with depressive disorders have similar symptoms, similar immunologic changes, similar dysfunction of the hypothalamic-pituitary-adrenal axis and similar responses to antidepressant treatment. What differentiates patients with CFS from patients with depressive disorders is not a virus, but rather the manner in which they express their suffering.

When one applies the same modern technology to depressive disorders that is being applied to CFS, it is difficult to distinguish the two illnesses. This is why I believe that CFS is an affective disorder (or that major depression has a viral etiology). Either way, they seem to have a common pathophysiology. In light of this I think it is time that controlled studies were done with antidepressants and CFS. If these studies showed a positive result, then other treatments for depression (psychotherapy,

TABLE TWO
COMMON FEATURES OF CHRONIC
FATIGUE SYNDROME AND
DEPRESSIVE DISORDERS

1. Similar Symptoms: fatigue, depressed mood, sleep disturbance, diffuse pain and difficulty concentrating.
2. Similar Immunologic Changes: natural killer cell dysfunction.
3. Similar Hypothalamic-Pituitary-Adrenal dysfunction.
4. Similar Treatment Modalities.

light therapy, exercise and/or ECT) should be tried in a controlled manner on patients with CFS. However, this highlights one of the major differences between depressive disorders and CFS: patients with CFS are hostile to the depressive label. Consequently, they will not be enthusiastic about treatments which are associated with psychiatry even though there are no treatments currently available for CFS. A study with antidepressants in patients with CFS will need to be packaged appropriately, but I think it will show positive results and give physicians an effective treatment for this difficult and debilitating illness □

REFERENCES

1. Lane TJ, Manhews DA, Manu P: The low yield of physical examinations and laboratory investigations of patients with chronic fatigue. *SO AM J Med SCI* 299(5): 313-318, 1990.
2. Jones JF, Ray CG, Minnich LL, et al: Evidence for Active Epstein-Barr Virus infection in Patients with Persistent, Unexplained Illness: Elevated Anti-Early Antigen Antibodies. *Annals of Intern Med* 102:1-7, 1985.
3. Stephen SE, Tosato G, Armstrong G, et al: Persisting Illness and Fatigue in Adults with Evidence of Epstein-Barr Virus Infection. *Annals of Intern Med* 102:7-16, 1985.
4. Holmes GP, Kaplan JE, Gantz, NM, et al: Chronic Fatigue Syndrome: A Working Case Definition. *Annals of Intern Med* 108: 387-389, 1987.
5. Cowley G, Hager M, Joseph N: Chronic Fatigue Syndrome: A Modern Medical Mystery. *Newsweek*, 62-70, Nov. 12, 1990.

CHRONIC FATIGUE SYNDROME

6. Langley L, Chronic Fatigue can debilitate sufferers. *The News and Courier*, Charleston, SC C1, Sept 25, 1990.
7. Taerk GS, Toner BB, Salit IE: Depression in Patients with Neuromyasthenia (Benign Myalgic Encephalomyelitis). *Int'l J Psych in Med* 17: 49-56, 1987.
8. Manu P, Matthews DA, Lane TJ: The Mental Health of Patient with a Chief Complaint of Chronic Fatigue. *Arch Intern Med* 148:2213-7, 1988.
9. Kruesi MJP, Dale J, Straus SE: Psychiatric Diagnoses in Patients Who Have Chronic Fatigue Syndrome. *J Clin Psych* 50:53-56, 1989.
10. Gold D, Bowden R, Sixbey J: Chronic Fatigue: A Prospective Clinical and Virologic Study. *JAMA* 264: 48-53, 1990.
11. Imboden JB, Canter A, Cluff LE : Convalescence from Influenza: A Study of the Psychological and Clinical Determinants. *Arch of Intern Med* 108:115-121, 1961.
12. Shafran SD: The Chronic Fatigue Syndrome. *Amer J Med* 90:730-739, 1991.
13. Buchwald D, Komaroff AL: Review of Laboratory Findings for Patients with Chronic Fatigue Syndrome. *Reviews of Infectious Diseases* 13(Suppl) S12-8, 1991.
14. Stein M, Miller AH, Trestman RL: Depression, the Immune System, and Health and Illness. *Arch Gen Psych* 48:171-7, 1989.
15. Bukowski JF, Woda BA, Habu S, et al: Natural Killer Cell Depletion Enhances Virus Syntheses and Virus-induced Hepatitis in vivo. *J Immuno* 131:1531-38, 1983.
16. Evans AS: Chronic Fatigue Syndrome: Thoughts on Pathogenesis. *Reviews of Infectious Diseases* 13(Suppl) S56-9, 1991.
17. Pitts FN, Allen RE, Allen AD: Antibodies to the Early Antigen of the Epstein-Barr Virus in Relation to Major Depression. In Miller AH, ed. *Depressive Disorders and Immunity*. Washington, DC: American Psychiatric Press; 171-89, 1989.
18. Gold PW, Goodwin FK, Chrousos GP: Clinical and Biochemical Manifestations of Depression: Relation to the Neurobiology of Stress. *NEJM* 319:348-53 & 413-20, 1988.
19. Demitrack MA, Dale JK, Straus SE, et al: Evidence for Impaired Activation of the Hypothalamic-Pituitary-Adrenal Axis in Patients with Chronic Fatigue Syndrome. *J of Clin Endo and Metab* 73:1224-34, 1991.
20. Gantz NM, Holmes GP: Treatment of Patients with Chronic Fatigue Syndrome. *Drugs* 38:85-92, 1989.
21. Buchwald D, Gantz NM, Katon WJ, Manu P: Tips on Chronic Fatigue Syndrome. *Patient Care* 45-58, May 1991.
22. Goldenberg DL, Felson DT, Dinerman H: A Randomized, Controlled Trial of Amitriptyline and Naproxen in the Treatment of Patients with Fibromyalgia. *Arthritis and Rheum* 29:1371-7, 1986.
23. Carette S, McCain GA, Bell DA, Fam AG: Evaluation of Amitriptyline in Primary Fibrositis. *Arthritis and Rheum* 29 655-9, 1986.

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SCMA NEWSLETTER

A PUBLICATION OF THE SOUTH CAROLINA MEDICAL ASSOCIATION
Joy Drennen, Editor
798-6207, in Columbia

Contributions welcomed
1-800-327-1021, outside Columbia

February 1992

HIGHLIGHTS OF JANUARY 18 BOARD OF TRUSTEES MEETING

At its January 18 meeting, the SCMA Board of Trustees nominated Walter J. Roberts, Jr., MD, for the Joint Commission Hospital Accreditation Program Professional & Technical Advisory Committee.

William S. Houck, Jr., MD, (D, House District No. 63) described his bill pending in the Legislature that would establish a Cost Containment Commission. The board voted to support this bill.

At its meeting in November, 1991, the board took action on policies pertaining to ownership of records, patients' rights to copies of their records, fees for copying records, records retention guidelines and issues relating to retirement or change of location. At the January 18 meeting, the board approved guidelines which will be used to structure legislation which may be introduced into the General Assembly. Added to the guidelines will be an immunity provision.

The board approved several changes to the HIV/HBV

Safety Network that were recommended by the Policy Panel. (The Policy Panel makes decisions as to how the program will operate as well as serving as the core group of the statewide Expert Review Panel.) Expert Review Sub-panels will provide case review for seropositive individuals. The makeup of the sub-panels will be designed to meet each individual's specific needs. The recommendations of the sub-panel must be approved by the entire Policy Panel.

Because the CDC has withdrawn from developing a list of exposure-prone invasive procedures, the panel felt that it should not restrict a physician/dentist from performing certain procedures. Rather, the Expert Review Sub-panel should counsel a practitioner on infection control guidelines as well as less risky methods to perform certain procedures and any other modifications deemed advisable. It was also decided to distribute letters certifying compliance with the CDC guidelines rather than certificates. Testing is expected to begin in late February. □

MEDICARE UPDATE

Grace Period Extended on Use of New Visit and Consultation Codes: HCFA Administrator Gail Wilensky has granted physicians a 30-day extension (until February 29) of the current grace period for use of the new visit and consultation codes. The AMA had requested a 60-day extension until April 1. Under the extension physicians will be encouraged to use the new visit and consultation codes immediately but carriers will continue to accept the old codes until February 29.

New 1500 Claim Form: You may now use the new 1500 form; however, do not use the new place of service codes which were provided in the December Medicare Advisory until you are notified by Medicare.

Reduction in Payment for Services Rendered Elsewhere than in Physician's Office: Medicare rules now require a reduction in payment for services which are primarily performed in a physician's office but which are rendered elsewhere. The rationale for this reduction is that you do not incur as much practice expense when providing services outside of your office. These services are indicated by an asterisk on your fee schedule from Medicare. If a physician provides emergency care in the ER and uses codes 99281 through 99285, this reduction will not occur. Moreover, although Medicare does not reimburse for travel time to the emergency room, a physician who is in contact with emergency personnel on his car phone may include this evaluation and management effort or time when deciding which code to bill. Be sure to refer to this involvement in your documentation.

MEDICARE UPDATE (Continued)

Medicare Offices Relocated: Please refer to your December special Medicare Advisory from BC/BS for the new address and phone numbers of Medicare offices.

Health Manpower Shortage Areas: Health Manpower Shortage Areas are now called Health Professional Shortage Areas. Medicare provides a 10 percent bonus if you practice in one of these areas. You must include a special modifier on each claim in order to receive the bonus.

When Another Practice Covers for you: In this case, you may submit the claim using your Medicare provider number. Although you may need to use a special modifier in the future, there is no such requirement at the present.

Reduction in Payment for J Codes: The new Medicare rules require the carriers to base reimbursement for drugs on the lower of acquisition cost or the national average wholesale price of the drug. According to SC BC/BS, this is not a limiting charge, and the physician may charge the patient the difference between the amount paid by Medicare and the physician's usual charge. Medicare does allow reimbursement for a minimal office visit or administration of an injection in addition to the J code.

Hospital-Salaried Employees Now Billing Directly: If you were a hospital-salaried employee who converted to direct billing of patients between November 1, 1982 and January 31, 1985, you and your patients may be entitled to a substantial dollar payment from Medicare. These payments are being made as a result of a federal class action judgment, *Cosgrove v. Sullivan*. Please contact Charles Palmieri at Medicare for further information regarding Cosgrove payments.

Coding as Established Patient: According to Medicare, if your partner has seen a patient within the last three (3) years, this patient must be coded as an established patient if you provide care, even if you are a different specialty and have never previously treated the patient.

Coding Consults: In order to code a consult, there must be a specific referral to you; it is not sufficient for the patient to have been referred "to a surgeon," for example.

Direct Medicare questions to Barbara Whittaker or Cindy Osborn at SCMA Headquarters. □

MEDICAID UPDATE

EKGs: Unlike Medicare, Medicaid in SC will continue to reimburse physicians for interpretations of EKGs.

Neonatal Codes: The 1992 CPT coding changes do not affect or alter the locally assigned W codes for neonatal services. Medicaid continues to recognize the neonatology procedure codes W0105 through W0130.

Pathology Services: Clinical pathology consultation codes 80500 and 80502 are covered procedures and may be billed when appropriate. The following procedure codes may be billed in place of service 1 or 2 (inpatient and outpatient hospital) with a 26 modifier (professional component): 85097 through 85105, and 88104 through 88365.

New/Modified Error Codes: Medicaid has established three new error codes related to non-covered modifiers and anesthesia services:

Error

Code Description

- | | |
|-----|--|
| 312 | Modifier is non-covered by Medicaid. |
| 411 | Anesthesia procedure code requires anesthesia modifiers. |
| 412 | Surgery procedure code is no longer valid with an anesthesia modifier. |

With the deletion of the 75 modifier for concurrent care, a new system edit has been developed to monitor claims processing. Concurrent care is reimbursable when two or more physicians render care for unrelated conditions at the same time, provided the rendering physicians are not of the same or similar specialty and each physician is rendering care unique to his or her own practice specialty.

Error

Code Description

- | | |
|-----|--|
| 851 | Recipient has received the same service from a physician of the same practice specialty for the same diagnosis code. |
|-----|--|

MEDICAID UPDATE (Continued)

The 852 error code has been modified and with claims processing on or after February 6, 1992, the description of the following error codes apply.

Error

Code Description

- | | |
|-----|--|
| 852 | Duplicate billing for a previously paid line for the same date of service. |
| 892 | Duplicate lines for same date of service. |

A Medicaid Bulletin dated January 10, 1992 has been mailed by the State Health and Human Services Finance Commission (HHSFC). This bulletin includes updates on Norplant; evaluation management codes and fees; and other important Medicaid information. ☐

CODING UPDATE

CHAMPUS will not accept the new codes until May 1.

Please note that modifier 21 was inadvertently omitted from the 1992 code book. Use this modifier when the service provided is prolonged or otherwise greater than that usually required for the highest level of E/M service within a category. A report may also be appropriate. ☐

SC WORKERS' COMPENSATION COMMISSION

The SC Workers' Compensation Commission, in cooperation with the SCMA, will hold the 13th Annual Medical Seminar, June 12-14, at the Sheraton Charleston Hotel. Registration forms will be mailed soon, so plan now to attend.

The Workers' Compensation Commission asks that you continue to use the Fee Schedule for Physicians and Surgeons with the 1991 CPT codes. They are currently working to update to the new codes and will advise you when to begin using the 1992 codes. ☐

CLIA UPDATE

The regulations implementing the Clinical Laboratory Improvement Act of 1988 are expected this month. These regulations are expected to classify labs by level of complexity. We will include a summary in next month's newsletter if the regulations are published as expected.

According to *AM News*, most physicians' labs are expected to be classified moderately complex and it is expected that these will be held to standards that include quality control and quality assurance, proficiency testing and personnel standards. It is expected that most office labs will be required to pay a registration fee of \$350. ☐

RANDOLPH D. SMOAK, JR., MD CANDIDATE FOR AMA BOARD OF TRUSTEES

The SCMA is pleased to announce that Randy Smoak is a candidate for the AMA Board of Trustees. The election will be in June. A campaign for a position on the AMA Board requires significant expenditures; we ask any of you willing to assist Randy to please send a contribution for the campaign to the SCMA, PO Box 11188, Columbia, SC 29211, Attention: Smoak Campaign. Use the form below.



Enclosed is a contribution for Randy Smoak's campaign for the AMA Board of Trustees.

Name

Address

FREE VACCINE AVAILABLE

DHEC Commissioner, Mike Jarrett, has announced that free vaccines will be available to private physicians in mid-March. Watch for a DHEC communication with details. ☐

SC 1992 REPORTABLE DISEASE LIST CHANGES

The official South Carolina list of reportable conditions has been expanded for 1992 and now includes: Asbestosis; Byssinosis; Carbon Monoxide Poisoning; CD4 lymphocyte counts ≤ 200 ; Escherichia coli O157:H7 infection; Hemolytic Uremic Syndrome; HTLV 1, 2; Mesothelioma; Pesticide Poisoning; Pneumonoconiosis; Silicosis; and Toxic Hepatitis. You should have received a list of these additions and clarifications from the Department of Disease Prevention and Epidemiology at DHEC. For additional information, call 737-4165 in Columbia. ☐

COUNTY MEDICAL SOCIETY AIDS EDUCATION PROGRAMS

As we enter the second decade of the AIDS epidemic, the impact is hitting all areas of our state. In order to provide you with the most up-to-date information on new treatments, available resources and legal issues, the SCMA, the SC AIDS Training Network and DHEC have combined efforts to provide each county medical society with an HIV/AIDS Update program.

This program will be provided for the county societies' regularly scheduled meetings at no cost. All county medical society presidents have received a letter announcing the program. Please let your president know if you would be interested in attending such a program.

County society presidents should contact Melanie VanSant of the AIDS Training Network in Columbia at 777-4845 to schedule a speaker or to receive more information. ☐

OCCUPATIONAL EXPOSURE TO BLOODBORNE PATHOGENS STANDARD BECOMES EFFECTIVE MARCH 6, 1992

The Occupational Safety and Health Administration (OSHA) has promulgated a standard to eliminate or minimize occupational exposure to HBV, HIV and other bloodborne pathogens. OSHA has made a determination that employees face a significant health risk as the result of occupational exposure to blood and other potentially infectious materials because they may contain bloodborne pathogens. The Agency further concludes that the risk of exposure can be minimized or eliminated by using a combination of engineering and work practice controls, personal protective clothing and equipment, training, medical surveillance, HBV vaccination, signs and labels, and other provisions. Exposure control plans must be completed by March 6, 1992.

For copies of the standard, contact Cathy Boland at the SCMA office. Direct questions to Sven Rundman at (404) 347-2281. ☐

UPCOMING MEETINGS

SCMA Annual Meeting: By the time this newsletter reaches your office, you should have received registration information regarding the 144th SCMA Annual Meeting and Scientific Assembly. **Pre-register today!** The meeting is scheduled for April 29 - May 3, 1992, at the Omni Hotel in Charleston. County Societies and specialty societies are reminded to provide the names of their delegate(s) to the SCMA as soon as possible.

SC Society of Medical Assistants, Inc.: The SC Society of Medical Assistants will hold its annual state convention April 9-12, 1992 at the Greenville/Spartanburg Airport Marriott, One Parkway East, Greenville. Medical Assistants from physicians' offices and hospitals throughout the state will attend. For further information, contact Sandra W. Messer, CMA, 148 Dillon Drive, Spartanburg 29302. (803) 582-1089.

RESISTANCE TRAINING IN CARDIAC REHABILITATION: RISKS, BENEFITS, AND RECOMMENDATIONS*

DAVID O. SWORD, M. S.**

The importance of regular aerobic exercise as part of a comprehensive cardiac rehabilitation program has become widely accepted. An overview of studies has shown that those programs which include exercise result in an average reduction in all cause mortality and reinfarction mortality of 20 and 25 percent respectively during a three-year follow-up period.^{1,2}

Dynamic, or aerobic exercise, results in an improvement in cardiorespiratory fitness and one's ability to tolerate repetitive work. Because of its predictable benefits, aerobic exercise is of utmost importance to the cardiac rehabilitation patient. Activities typically prescribed include walking/jogging, cycling, and perhaps upper-body activities such as arm ergometry, rowing, or arm-assisted (eg. AirDyne) cycling.

Progressive resistance exercise (PRE) such as circuit weight training (CWT) has not generally been a part of the cardiac patient's exercise prescription. It is only in the past few years that this type of training has begun to be incorporated into cardiac rehabilitation programs, with many programs still lacking access to sophisticated resistance training equipment. The results of studies that have used PRE as part of a comprehensive exercise program in cardiac patients have been encouraging.^{3,4,5}

The reasons given in the past for the suggested avoidance of PRE (ie. "weight lifting") included fears concerning potentialities in blood pressure responses, angina/ischemia, and arrhythmias. The

purpose of this paper was to review some of the current knowledge regarding the physiological responses to PRE in cardiac patients. Additionally, practical guidelines for incorporation of PRE into a cardiac rehabilitation program will be offered.

BLOOD PRESSURE RESPONSES: ACUTE AND CHRONIC

Aerobic training programs produce predictable acute and chronic HR and BP responses.^{6,7,8} With acute exercise, HR and SBP will rise in proportion to the intensity of the exercise. The DBP should remain fairly constant or perhaps fall slightly in response to an acute exercise session. HR and BP at rest and during submaximal exercise are lowered with chronic aerobic exercise. These chronic effects on HR and BP indicate an improvement in cardiovascular efficiency and are due primarily to peripheral adaptations.

Resistance training is also associated with acute increases in HR and SBP. Unlike aerobic exercise, resistance training may also result in an increase in DBP. It is the acute elevation of systolic and diastolic BP that is of concern when considering resistance exercise for the cardiac patient. Resistance training programs that utilize heavy loads have been shown to cause significant increases in systolic and diastolic BP.^{9,10} Programs using CWT with light to moderate loads appear to result in acute rises in BP that are similar to those experienced during aerobic training.^{3,11}

The acute rises reported in DBP during resistance training may provide an important function. In the face of increasing interthoracic pressure, it has been hypothesized that the increase in DBP is a

*From the Cardiac Rehabilitation/Adult Fitness Program, Medical University of South Carolina and The Citadel, Charleston.

**Address correspondence to Mr. Sword at Deas Hall, The Citadel, Charleston, SC 29409.

physiological adaptation that provides for adequate perfusion. Once the outside stress (the resistive load) is removed, the interthoracic pressure declines along with DBP.¹²

Reports on the chronic effects of resistance training on resting hemodynamics have been mixed. Allen et al, 1976¹³ reported no significant hemodynamic changes in male college subjects participating in a 12-week CWT program. Rest intervals of 60 seconds between sets in addition to the young age of the subjects may in part explain the lack of any significant changes. In another study, Crozier et al, 1989¹⁴ reported no change in resting hemodynamics in a group of cardiac patients undergoing a 10-week strength training program. Due to the program design, it is likely that the work:rest ratios in this study were also of a duration that would not promote significant changes in resting hemodynamics.

In a 16-week high intensity resistance training program, Hurley et al, 1988¹⁵ reported a decrease in resting DBP in middle-aged male subjects. Hagberg et al, 1984¹⁶ reported a decrease in resting BP amongst hypertensive adolescents that participated in an aerobic training program. When the subjects switched to a resistance training program the reduction in BP was maintained.

ANGINA/ISCHEMIA

A major concern with resistance training in a cardiac population is the fear that there will be a potentiation in ischemic and/or anginal symptoms. Ischemia has been shown to occur at a relatively constant Rate Pressure Product (RPP) in persons with CAD. A large rise in BP coupled with an acute rise in HR during resistive work may result in RPP readings at or beyond that associated with ischemia/angina during dynamic (aerobic) activity.

To date, studies that have examined the effects of resistive exercise on ischemia and angina indicate that this type of training does not result in an increased frequency of either. Resistive work and combined resistive/dynamic work in fact have been associated

with fewer ischemic responses when compared to dynamic activity alone.^{12,17,18} This reduction in ischemia has been shown to occur despite the attainment of RPP levels above that known to produce ischemia during dynamic exercise.¹⁹

The mechanism for a decrease in ischemia/angina despite suprathreshold RPP levels may be the increase in perfusion pressure that was mentioned earlier. Because myocardial perfusion occurs predominantly during diastole, increased DBP would provide an increased perfusion pressure.¹⁸ Individuals with compromised ventricular function and/or those who do not show increases in DBP with resistive effort may be at increased risk of developing ischemia/angina during this type of work.^{19,20} These individuals may represent a group in which resistive exercise would be contraindicated.

ARRHYTHMIC RESPONSES

Studies which have compared the frequency of arrhythmias during resistive and dynamic activity have reported differing results.

Atkins et al, 1976²¹ reported an increased frequency of ventricular arrhythmias in cardiac patients during isometric handgrip activity as opposed to dynamic exercise on a bicycle ergometer. The incidence of ventricular tachycardia was also significantly greater with isometric exercise.

Kerber et al, 1975¹² also reported an increased frequency of arrhythmias during static exercise when compared to dynamic activity. When a dynamic activity was superimposed on the static exercise, no difference in arrhythmic response was noted between the purely dynamic versus the combined static-dynamic groups.

DeBusk et al, 1978¹⁸ compared the effects of static and dynamic exercise in male MI patients. They reported a decreased frequency of arrhythmias during isometric activity when compared to dynamic activity. In a related article, DeBusk et al, 1979¹⁹ reported a slight increase in ventricular ectopy in cardiac patients during combined static/dynamic exercise versus purely dynamic exercise. The

complexity of the arrhythmias did not differ between groups.

The results of these studies makes it difficult to state definitive conclusions regarding resistance exercise and risk of arrhythmias. It would seem appropriate that cardiac patients beginning a PRE program be monitored via ECG telemetry during the initial two to three weeks of training. This would serve to identify those individuals who may be susceptible to resistance training induced arrhythmias.

FUNCTIONAL CAPACITY

With aerobic training, improvements in functional capacity (FC, Vo₂max) are to be expected. Studies indicate that programs of proper frequency, duration, and intensity will result in improvements of 15 percent or more.^{6,7}

Resistance training is predominantly an anaerobic activity, and as such, is not associated with large improvements in FC. In a review of CWT programs Gettman and Pollack, 1981²² reported that this type of training should not be expected to result in improvements of more than five percent in FC.

Harris and Holly, 1987¹¹ reported improvements of 7.8 and 21 percent in Vo₂max values amongst borderline hypertensive subjects in treadmill and arm ergometry testing respectively. The subjects participated in a nine-week CWT program in which the work:relief ratio was 3:1 (45 seconds work: 15 seconds rest). The impressive increase in upper body Vo₂max suggests that during pre-training testing, subjects were limited by a lack of muscular strength resulting in premature arm fatigue.

Allen et al, 1976,¹² Kokkinos et al, 1988,²³ and Wilmore et al, 1978²⁴ reported no significant improvements in Vo₂max amongst college age males exposed to varying types of resistance training programs. In Wilmore's study, female subjects did show a significant improvement in Vo₂max. It was hypothesized that the reason for the improvement amongst the women was their tendency to exercise at a

greater percentage of their HRmax and Vo₂max than their male counterparts.

There is a linear relationship between HR and Vo₂ that exists with aerobic exercise; this does not appear to hold true with resistance training.²⁴ This lack of relationship between HR and Vo₂ with resistance training would help to explain the lack of improvement in FC despite an appropriately elevated HR throughout the exercise session. Explanations for the relatively large increase in HR without concomitant rises in Vo₂ include a greater catecholamine output and an attenuated SV response with resistance exercise.^{24,12} The attenuated SV response would necessitate a rise in HR in order to meet the demands for an increased cardiac output.

STRENGTH AND BODY COMPOSITION

There is a gradual decline in strength and muscle mass that accompanies the aging process. A portion of this loss is no doubt due to the normal physiological sequela of aging. There is, however, a great deal of evidence to indicate that a large part of the loss is a result of reduced activity levels. By increasing activity levels in general, and specifically through resistance training, strength and lean body mass (LBM) declines can be retarded and/or reversed.

In their review of CWT programs, Gettman and Pollack reported strength improvements of seven to 32 percent. Increases in LBM in the range of 1-3 Kg also occurred.

Fiatarone et al, 1990⁹ reported significant increases in leg strength (174 percent) and mid-thigh girth (nine percent) in non-agenarians participating in an eight-week resistance training program. These results demonstrate that elderly individuals can benefit from resistance training, and that the improvements can be both rapid and dramatic. An increase in muscular strength and LBM could contribute toward greater independence and an improved quality of life in the elderly.

Studies that have examined the results of resistance exercise in cardiac patients have

also reported significant improvements in muscular strength. Keleman et al, 1986³ reported an average strength increase of 24 percent in cardiac patients participating in a combined aerobic/CWT program. Subjects exercised three days/week performing 20 minutes of CWT. The CWT consisted of two circuits of 10 exercises using 40 percent of the 1RM. Bodyweight in this group remained constant, however there was a decline in %BF, suggesting an increase in LBM.

Crozier et al, 1989¹⁴ using a fairly intense CWT program, reported an average increase in strength of 30 percent within a group of cardiac patients. Training consisted of one circuit of six exercises performed three days/week for 10 weeks. Training poundages were equal to 80 percent of the 1RM for a given exercise. Loads were increased when the subject was able to perform 12 repetitions without undue discomfort. The only significant change in body composition reported in this group was an 11 percent increase in upper-leg girth.

SUMMARY

Based on a review of the literature, the following points were made in regards to the safety and efficacy of PRE in a cardiac population:

1) The large rises in systolic and diastolic BP that have been reported with high intensity weight training do not seem to occur when weight loads are in the light to moderate range.

2) Moderate rises in DBP during resistance exercise may represent a physiological adaptation that maintains perfusion pressure during periods of increased interthoracic pressure.

3) When compared to dynamic exercise, PRE does not result in a greater frequency of ischemia/angina. The incidence of ischemia may in fact be less, in part due to the increase in perfusion pressure.

4) Definitive conclusions regarding the arrhythmic producing effects of PRE cannot be made. Those individuals that show a susceptibility to arrhythmias during dynamic

exercise may also demonstrate this tendency during PRE, therefore continuous ECG telemetry is recommended for cardiac patients who are initiating a PRE program.

5) The loss of muscular strength and mass that occurs with aging can be delayed and/or reversed with PRE. This can be particularly important to cardiac patients who wish to return to former occupational or recreational activities which require varying degrees of muscular strength. By improving strength levels, these individuals are able to work at a lower percentage of their strength capabilities thus making daily activities less demanding.

SAMPLE CIRCUIT WEIGHT TRAINING PROGRAM

Exercises

- 1) Bench press
- 2) Lat machine pulldowns
- 3) Leg extensions
- 4) Leg curls
- 5) Seated overhead press
- 6) Bicep curls
- 7) Heel raises
- 8) Sit ups (without weight)

Obtain a "conservative" 1RM for exercises 1-7 prior to program initiation. Assure an adequate warm-up and gradual weight progression when determining the 1RM. The actual loads used for the workout should be equivalent to 40 to 50 percent of the 1RM. Have participants perform one circuit using 30-second work intervals followed by 30-second rest intervals. Gradually, over the course of several weeks, have the subjects reduce their recovery time to 15 seconds. When a subject can complete 15 repetitions of an exercise in good form, increase the load by five to 10 percent. The addition of a second and/or third circuit can be made at the discretion of the program staff. Have the participants perform the CWT program two to three times/week on non-consecutive days. The aerobic portion of the program may be performed three to five days/week.

This protocol is similar to the one described by Keleman et al,³ and would appear suitable for use in a cardiac population. Until field-

tested, no definitive conclusions can be made concerning this protocol.

CONTRAINDICATIONS

Those individuals who qualify for traditional cardiac rehabilitation programs will, in most cases, also qualify for inclusion in a CWT program. It is important to stress to the participant that CWT is not intended as a substitute for aerobic exercise, merely an adjunct. Each individual should be cleared for this type of activity by their cardiologist, as certain conditions such as poor ventricular function, uncontrolled arrhythmias, uncontrolled HTN, musculoskeletal problems, etc. may preclude this type of activity. Participants must be instructed in the proper use of the equipment, and their exercise form should be carefully critiqued. During the initial sessions patients should be closely monitored for any signs of exercise intolerance.

SAMPLE PROGRAM

As an example, the following guidelines might be used to incorporate CWT into the traditional cardiac rehabilitation program.

1. Five minutes of general warm-up activity
2. Thirty-five minutes of aerobic conditioning.
3. Fifteen to twenty minutes of CWT
4. Five minutes of cool-down activity

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REFERENCES

1. O'Conner GT, Buring JE, Yusuf S, Goldhaber SZ, Olmstead EM, Paffenbarger, Hennekens CH: An overview of randomized trials of rehabilitation with exercise after myocardial infarction. *Circulation* 1989; 80:234-244.
2. Oberman A: Does cardiac rehabilitation increase long-term survival after myocardial infarction? *Circulation* 1989; 80:416-418.
3. Keleman MH, Stewart KJ, Gillian RE, Ewart CK, Vslenti SA, Mnnley JD, Keleman MD: Circuit weight training in cardiac patients. *J Am Coll Cardiol* 1986; 7:38-42.
4. Keleman MH, Effron MB, Valenti SA, Stewart KJ: Exercise training combined with antihypertensive drug therapy: effects on lipids, blood pressure, and left ventricular mass. *JAMA* 1990; 263:2766-2711.
5. Stewart KJ: Resistive training effects on strength and cardiovascular endurance in cardiac and coronary prone patients. *Med Sci Sports Exerc* 1989; 21:678-682.
6. American College of Sports Medicine. Position stand on the recommended quantity and quality of exercise for developing and maintaining cardiorespiratory and muscular fitness in healthy adults. *Med Sci Sports Exerc* 1990; 22:265-274.
7. Franklin BA, Wisley D, Johnson S, Mitchell M, Rubenfire M: Chronic adaptations to physical conditioning in cardiac patients. *Clinics Sports Med* 1984; 3:471-512.
8. Brooks GA, Fahey TD: *Exercise Physiology: Human Bioenergetics and Its Applications*. New York; Macmillan Publishing Company, 1985; pp. 313-341.
9. Fiatarone MA, Marks EC, Ryan ND, Neredlth CN, Lipsitz LA, Evans WJ: High-intensity strength training in nonagenarians: effects on skeletal muscle. *JAMA* 1990; 263:3029-3034.
10. MacDougall JD, Tuxen D, Sale DG, Moroz JR, Sutton JR: Arterial blood pressure response to heavy resistance exercise. *J Appl Physiol* 1985; 58:785-790.
11. Harris KA, Holly RG: Physiological response to circuit weight training in borderline hypertensive subjects. *Med Sci Sports Exerc* 1987; 19:246-252.
12. Kerber RE, Miller RA, Najjar SM: Myocardial ischemia effects of isometric, dynamic and combined exercise in coronary disease. *Chest* 1975; 67:388-394.
13. Allen TE, Byrd RJ, Smith DP: Hemodynamic consequences of circuit weight training. *Res Q* 1976; 47:209-306.
14. Crozier LE, Ghilarducci MA, Holly RG, Amsterdam EA: Effects of high resistance training in coronary artery disease. *Am J Cardiol* 1989; 64:866-870.

(continued on page 74.)

15. Hurley BF, Hagberg JM, Goldberg AP, Seals DR, Elsani AA, Brennan RE, Holloszy JO: Resistance training can reduce coronary risk factors without altering Vo_2max or percent body fat. *Med Sci Sports Exerc* 1988; 20:150-154.
16. Hagberg JM, Ehsani AA, Goldring D, Hernandez A, Sinacore DR, Holloszy JO: Effects of weight training on blood pressure and hemodynamics in hypertensive adolescents. *J Pediatr* 1984; 104:147-151.
17. Corbett BN, Sutherland JB, Cuddy TE: Isometric exercise in patients with angina pectoris (abstract). *Circulation Supp II* 1978; II-138.
18. DeBusk RF, Valdez R, Houston N, Naskell W: Cardiovascular responses to dynamic and static effort soon after myocardial infarction. *Circulation* 1978; 58:368-375.
19. DeBusk R, Pitts W, Haskell W, Houston N: Comparison of cardiovascular responses to static-dynamic effort and dynamic effort alone in patients with chronic ischemic heart disease. *Circulation* 1979; 59:977-984.
20. Lowe DK, Rothbaum DA, McHenry PL, Corya BC, Rnoebel SB: Myocardial blood flow response to isometric (handgrip) and treadmill exercise in coronary artery disease. *Circulation* 1975; 51:126131.
21. Atkins JM, Mathews OA, Blomqvist CG, Mullins CB: Incidence of arrhythmias induced by isometric and dynamic exercise. *Br Heart J* 1976; 38:465-471.
22. Gettman LR, Pollock HL: Circuit weight training: a critical review of its physiological benefits. *Physician Sportsmed* 1981; 9:44-60.
23. Kokkinos PF, Hurley BF, Vaccaro P, Patterson JC, Gardner LB, Ostrove SH, Goldberg AP: Effects of low- and high-repetition resistive training on lipoprotein-lipid profiles. *Med Sci Sports Exerc* 1988; 20:50-54.
24. Wilmore JH, Parr RB, Girandola RN, Ward P, Vodak PA, Bartow TJ, Pipes TV, Romero GT, Leslie P: Physiological alterations consequent to circuit weight training. *Med Sci Sports* 1978; 10:79-84.
25. Hurley BF, Seals DR, Ehsani AA, Cartier LJ, Dalsky GP, Hagberg JM, Holloszy JO: Effects of high-intensity strength training on cardiovascular function. *Med Sci Sports Exerc* 1984; 16:483-488.



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THE MUSC EXPERIENCE WITH FINE NEEDLE BIOPSIES OF BREAST MASSES, 1988-1990*

PAUL H. O'BRIEN, M. D.**

DAVID B. PRICE, M. D.

Fine needle aspiration biopsy was initiated by Hayes Martin, the creative Director of the Head & Neck Service at Memorial Hospital. Dr. Martin's interest in fine needle aspiration biopsies was initiated during the '20s and developed during the '30s and '40s.¹ Much of Dr. Martin's success depended on the outstanding cytopathologists at Memorial Hospital, i.e., Drs. Ewing and Stewart.² The technique was not widely used, however, until the past 15 years. The ability to identify the nature of a soft-tissue mass by fine needle aspiration biopsy is a great advantage. If, indeed, the patient is shown to have cancer, the patient can have extensive education about the various strategies available for the problem. Obviously, the fine needle aspiration biopsy is clearly much more inexpensive than open biopsy techniques.

The problem is what happens when there is a suspicious lump and fine needle aspiration biopsy is negative. This deficiency needs to be well-understood by those using fine needle aspiration biopsy. Fine needle aspiration biopsy has a high percentage of false negatives. Of course, the rule is that such a false negative demands further acquisition of tissue by the responsible clinician until a definitive diagnosis is found.

The pathologic results of these operative specimens (O.S.) were recorded (including nodal status, if applicable), and these were subsequently divided into those that were benign and those that were malignant. As

described for F.N.B.'s, any bilateral specimens were treated separately. Outside hospital samples were included, if accompanied by necessary additional data.

Finally, the data from the F.N.B. set were cross-referenced to the O.S. set to generate a final subset of data which allows us to study the effectiveness of Fine Needle Biopsy with respect to its sensitivity and specificity as a tool for detecting breast malignancies.

The terms which will be used to determine the carefulness of F.N.B. for cancer screening are "Sensitivity," "Specificity," and Predictive Value Positive."³ The meaning of these terms will be described elsewhere in this paper. However, their mathematical definitions are outlined below:

$$\text{Sensitivity} = \frac{\text{True Positives}}{\text{True Positive} + \text{False Negatives}}$$

$$\text{Specificity} = \frac{\text{True Negatives}}{\text{True Negatives} + \text{False Positives}}$$

$$\text{Predictive Value Positive} = \frac{\text{True Positives}}{\text{True Positives} + \text{False Positives}}$$

RESULTS

A total of 229 F.N.B. specimens from 193 patients were examined. The mean age of these patients was 49.1 years (S.D. 17.5). The histologic results of these samples are described in Table 1.

Figure 1 gives a graphic description of the MUSC experience with F.N.B.'s throughout the study period.

One hundred fifty-four operative specimens (O.S.) were examined. This included 124 excisional biopsies and 30 mastectomies. The mean age for the O.S. group (mastectomies and excisional biopsies combined) was 53.3 years (SD 17.5).

*From the Department of Surgery, Medical University of South Carolina, Charleston.

**Address correspondence to Dr. O'Brien at the Department of Surgery, Medical University of South Carolina, 171 Ashley Avenue, Charleston, SC 29425-2270.

TABLE 1
RESULTS OF FINE NEEDLE BREAST BIOPSIES EXAMINED AT MUSC
JANUARY, 1988 - MARCH, 1990

CATEGORY	HISTOLOGY	1988		1989-90		TOTAL	
		No.	%	No.	%	No.	%
1.	Non-Diagnostic+	44	33.6	25	25.5	69	30.1
2.	Normal	39	29.8	7	7.1	46	20.1
3.	Benign Changes	20	25.3	36	36.7	56	24.5
4.	Inflammatory Changes	7	5.3	8	8.2	15	6.6
5.	Highly Atypical*	8	6.1	6	6.1	14	6.1
6.	Malignancy	13	9.9	16	16.3	29	12.7
TOTALS		131	100.0	98	99.9	229	100.1

+Accelular or lymphocellular

*Cells suggestive of malignancy

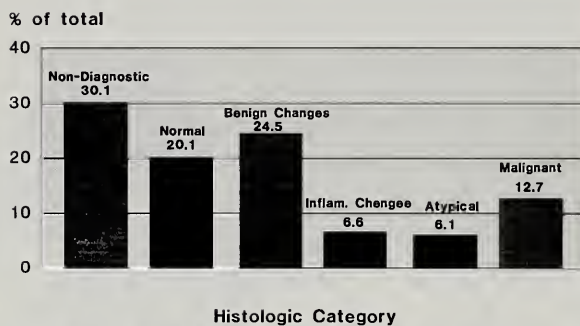


Fig. 1 Results of all Fine Needle Breast Biopsies
 Examined at MUSC from January 1988 to March 1990

FIGURE 1

Overall, the malignancy rate in the sample set was 56 percent. However, in the excisional biopsy subgroup alone, the malignancy rate was 45 percent. Most commonly, the benign biopsies were severe fibrocystic disease with duct ectasia and intraductal papillomas or fibroadenomas.

Of the 154 O.S. samples, 14.9 percent (23) were preceded by F.N.B. samples. The mean age for these 23 patients was 56.6 years (SD 15.4). Table 2 lists the results of these needle biopsies.

DISCUSSION

Several interesting observations can be made of Table 1. First would be an obvious decrease between the 1988 and 1989-90 group of non-diagnostic samplings (33.6 versus 25.5 percent) and normal samplings (29.8 versus 7.1 percent). On the other hand, there was a marked increase of diagnostic findings (9.9 versus 16.3 percent). This may indicate an improvement in sampling technique or, possibly, more frequent use of F.N.B.'s in those patients with obvious masses who, otherwise, would have undergone an open biopsy as a first test.

Furthermore, it should be noted that only 18.8 percent of all F.N.B. samples revealed malignancy or a suggestion of malignancy, while the remaining 82.3 percent were read as evidence of malignancy. This will become important when discussing the sensitivity, specificity and predictive value of F.N.B.

As shown in Figure 1, the most common result of a F.N.B. is acellular or hypocellular sample (non-diagnostic) which immediately places limitations on the procedure as a sensitive test for any possible disease. As noted above, however, the technical aspects of the procedure may be improving.

There appeared to be two groups in the comparative subset (Table 2); those who were operated on soon after F.N.B. (within 40 days) and those who were watched for some time after F.N.B. Eighty-three percent (19)

FINE NEEDLE BIOPSY

TABLE 2
COMPARISON OF RESULTS BETWEEN F.N.B. SAMPLES AND O.S. SAMPLES.

<i>Patient No.</i>	<i>Patient Initials</i>	<i>F.N.B. Histologic Categories+</i>	<i>Interval Time* (Days)</i>	<i>O.S. Findings (open biopsy or mastectomy)</i>
1	LB	1	5	Infiltrating ductal carcinoma
2	AT	1	7	Infiltrating ductal carcinoma
3	CT	1	2	Infiltrating ductal carcinoma
4	BM	2	225	Fibrocystic disease
5	KW	2	11	Fibrocystic disease
6	GF	2	230	Lobular carcinoma in-situ
7	MC	3	8	Fibrocystic disease
8	AF	3	35	Infiltrating ductal carcinoma
9	SG	3	336	Fibrocystic disease with atypical hyperplasia
10	AW	3	7	Infiltrating ductal carcinoma
11	SM	4	11	Infiltrating ductal carcinoma
12	CS	4	14	Fibrocystic disease with chronic mastitis
13	IW	4	37	Intraductal carcinoma
14	GF	5	6	Fibrocystic disease
15	AG	5	14	Comedo carcinoma
16	IA	6	137	Infiltrating ductal carcinoma with Pagetoid nipple involvement
17	LB	6	8	Intraductal carcinoma
18	ED	6		Poorly differentiated carcinoma
19	BF	6	25	Invasive ductal carcinoma, Coloid type
20	BH	6	0	Infiltrating ductal carcinoma
21	CJ	6	8	Poorly differentiated infiltrating ductal carcinoma
22	EJ	6	12	Infiltrating ductal carcinoma
23	BK	6	24	Infiltrating ductal carcinoma

+See Table 1 for explanation of Histologic Categories.

*Time between F.N.B. sampling and O.S. sampling.

fell into the first group, with a mean interval time of 12.9 days (SD 10.1). The observed group has a mean time of 239.5 days (SD 94.5).

The most important information that can be drawn from the data in Table 2 is the ultimate usefulness of the F.N.B. for predicting O.S. findings. This can be measured in three ways. The first way would be to measure its sensitivity. A sensitive test is one which identifies all of the true positives (i.e., malignancies as determined by O.S.) at the risk of having included some false negatives (See Figure 2). Sensitivity defines the efficiency of initial screening tests.

Specificity is vital for F.N.B. to be clinically effective. For instance, when the initial screening test is positive, there must be no more false positives than found in a frozen section of O.S. If a test has a high specificity, the likelihood of including a false positive is very low. The "predictive value positive" relates to the percent of patients with a positive screening test who actually have the disease in question (malignancy). For purposes of these calculations, we will consider F.N.B. histologic categories 1-5 to be a negative sample (no malignancy seen); and category 6 to be a positive sample.

As shown in Table 3, the F.N.B. is an

O. S. RESULTS	
Positive	Negative
True positive	False negative
False positive	True negative

FIGURE 2

inexact screening test, i.e., it has a low sensitivity (0.38). This translates to missing many actual cancers by failing to acquire malignant cells on needle aspiration. Fortunately, we have other tests available for initial testing, which include physical exams, mammograms and biopsies.

The test does, however, prove to be highly specific and predictive. This means that, in our study, each time that a fine needle aspiration contained cells determined to be histologically compatible with a malignancy, an invasive carcinoma was found at the time of operation. This eliminated the risks, possible complications, pain and expense of an operative procedure as well as the time delay before definitive treatment. In many instances, radiation therapists, if they are to

be involved with breast preservation, will not treat a "disturbed breast," secondary to biopsy. This includes the breast with hematoma or dense scar.

CONCLUSIONS

We have concluded, from our study, that although our ability to gather useful cells on a breast fine needle aspiration is limited, our technique is improving. Furthermore, although the (n) for our final subset is small (23), the clear-cut data allow us to make two final observations. First is that F.N.B. should not be used as the only screening test. A negative F.N.B. of a suspicious mass defines the need for an open biopsy. Secondly, the test, if positive for cancer, is very specific and predictive. This means that if the test were performed and the histology were read as malignant, there is little doubt that the breast contains a cancer. This can be very valuable information for educating the patient and planning the most efficient clinical strategy. □

REFERENCES

1. Martin, HE, Ellis EB: Aspiration Biopsy. SURG. GYN, & OBST. 59:578, 1934.
2. Stewart, FW: The Diagnosis of Tumors by Aspiration. Am. J. Path. 9:801, 1933.
3. Zelen, M: Theory of Early Detection of Breast Cancer in the General Population. In Henson, JC, Mattheiem, WH, Rozencweig, M: Breast Cancer Trends in Research and Treatment, New York, Raven, 1976.

TABLE 3
USEFULNESS OF F.N.B. TO DETECT CANCERS OF THE BREAST

True positives	10	Sensitivity	0.38
False positives	0	Specificity	1.00
False negatives	0	Positive predictive	
True negatives	5	value	100%

THE CHRONIC FATIGUE SYNDROME: *CAVEAT EMPTOR*

In this issue of *The Journal*, Dr. Edmund Higgins offers a provocative argument that the chronic fatigue syndrome (CFS) is an affective disorder—or alternatively, “that major depression has a viral etiology.” Dr. Higgins, who teaches both family medicine and psychiatry at the Medical University of South Carolina, suggests that therapy of depression may be effective for “this difficult and debilitating illness.”

Dr. Higgins also identifies the proverbial fly in the ointment. In this case, it is that afflicted patients “are hostile to the depressive label.” Some of them, therefore, go from doctor to doctor searching for a physical cause, an organic diagnosis. Some of them spend thousands of dollars searching for what may be the late 20th century’s equivalent to Ponce de Leon’s celebrated Fountain of Youth. The numbers of CFS sufferers make this a problem of major importance.

Symptoms consistent with CFS are extremely common. Of 500 unselected patients between the ages of 17 and 50 years, for example, 21 percent had symptoms consistent with this diagnosis.¹ These patients were as likely to have antibodies to the Epstein Barr virus (EBV) as were age- and sex-matched control subjects. Dr. Higgins provides the current CDC case definition for CFS, but it should be emphasized that this definition was formulated primarily for research purposes. Worldwide, about one in five patients seeking medical care are “always tired.”² Why?

The truth is, we don’t know. It is quite possible that future investigators will establish multiple etiologies for CFS. In some patients, CFS may be due to a single cause; in others, it may be multifactorial. In the meantime, it seems to me that these patients are best managed by adhering to three

principles.

First, exclude “treatable” causes. A careful history and physical examination combined with a few selected laboratory tests usually suffices to exclude major infections (endocarditis, tuberculosis, occult abscess), endocrine disorders (hypothyroidism, adrenal insufficiency, Cushing’s syndrome, diabetes mellitus), tumors (both solid and hematologic malignancies), organ failure (lung, liver, heart, kidneys), connective tissue diseases (lupus erythematosus, rheumatoid arthritis), and chronic inflammatory diseases of unknown etiology (sarcoidosis, chronic hepatitis).

Reassure the patient that you have considered a wide range of serious yet treatable possibilities, but that you wish to be selective about laboratory tests. In most instances, the latter need include only a complete blood count with sedimentation rate; a blood chemistry panel (SMA-17 or SMAC), and thyroid function tests (including TSH level). Human immunodeficiency virus (HIV) infection can cause chronic fatigue and should be sought if there are risk factors. Similarly, testing for connective tissue disease (e.g., FANA; RA factor test) is unnecessary unless there are other suggestive features. Testing for Lyme disease is recommended only if there are other features strongly suggestive of Lyme disease.³

Second, acknowledge our ignorance about the actual cause for this syndrome. Dr. Higgins points out that a large, somewhat confusing body of literature suggests a complex relationship between stress and the immune system.⁴ He reviews the fascinating prospective study by Imboden and colleagues in which persons with underlying depression were found to be more likely to have persistent fatigue after influenza A compared

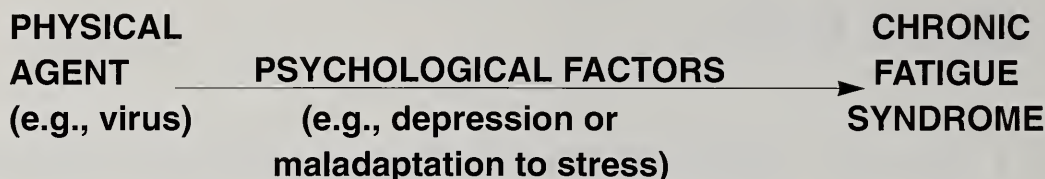


FIGURE 1. A dualistic explanation for the chronic fatigue syndrome: psychological factors modify the impact of a physical agent, such as a virus.

with patients who were not depressed prior to the epidemic.⁵ What is the relationship, then, between physical and psychological factors?

Given our current state of knowledge, a dualistic explanation may be not only the most appropriate but also the most palatable (Figure 1). Consistent with the observations by Imboden's group and others is the hypothesis that a physical agent (such as a virus) may precipitate the syndrome, but that the outcome also hinges upon such psychological factors as depression and maladaptation to stress. Among those who acknowledge the potential relationship between stress and the immune system is Dr. Stephen E. Straus of the National Institutes of Health, who helped popularize CFS in the mid-1980s. Unfortunately, as Dr. Straus himself has noted, "the present generation of scientists is ill equipped to explore this aspect of the hypothesis."⁶

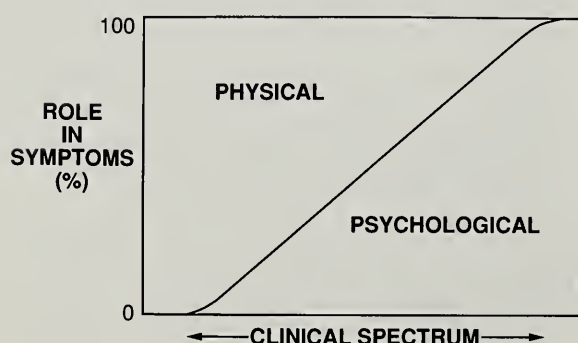


FIGURE 2. Although CFS may be "purely physical" in some patients (at the left of the spectrum as shown here) and "purely psychological" in others (at the right), most patients may fall somewhere in between these extremes.

It may well be that in some patients CFS is "purely physical" whereas in others it is "purely mental." A tantalizing observation is that some patients with CFS, but not control subjects, have been found to have viral particles in muscle biopsy samples.⁷ For many years, we have known that patients who have had Epstein-Barr virus infection (e.g., classic infectious mononucleosis) or other infections can have prolonged post-infectious asthenia. On the other hand, patients who complain of having "always being tired" may be more likely to have a "purely mental explanation." But in truth, in most patients we simply do not know—and have no way of knowing (Figure 2). At a research level, current interest centers especially on markers of immunologic activation.⁸ We must admit, however, that the clinical value of following such markers (not to mention altering them) is unproven.

Third, treat the whole person. CFS is extremely frustrating to patients and physicians alike. All of us prefer to deal in certainty but - as a great professor of psychiatry once put it - medical education is "education for uncertainty." If CFS summons us to be honest about the limitations of our knowledge, it should also summon patients to recognize that we must explore dimensions other than the "purely physical" if we are to help them cope.

Lane and colleagues recently reported that a structured psychiatric examination of CFS patients brought out a high incidence not only of depression but also of somatization.⁹ Based on these and other observations, I feel that nearly all patients with CFS should undergo formal psychiatric or psychological evaluation. The MMPI-2, properly interpreted

by a qualified psychologist, seems to me to be an especially useful method for identifying not only depression but also various tendencies of which the patients should be aware.

Depression, if present, should be treated. Counseling - by the physician or by a qualified psychologist - may enable patients to understand the basis for somatization and to strive toward more mature defense mechanisms such as sublimation, altruism, anticipation, and humor.¹⁰ Remind patients that in offering such advice, you are by no means singling them out as unique or pathologic; rather, striving toward use of the more mature defenses is a challenge for all of us. In addition, it seems appropriate to make certain common-sense recommendations:

- Get plenty of rest.
- Stay in shape. Exercise is not harmful provided one doesn't exceed one's target heart rate, and maintaining flexibility is important.
- Follow a common-sense diet, low in animal fat and high in fiber, including fruits and vegetables.
- Determine one's time of peak efficiency, as determined by a daily hour-by-hour diary. Then, use this time for the most important tasks.
- Make a written list of one's long-term goals in the major areas of life: primary circle; professional; financial; avocational; spiritual; and so forth. Review this list on a regular basis. Then say "no" to anything not promoting one's long-term goals.
- Stay stimulated.

The physician should not dismiss patients with CFS with the advice to "come see me when you have new symptoms." Regular follow-up visits should be scheduled. At each follow-up visit, the possibility of an

underlying disease with treatable implications should be reexamined. If the patient brings an article he or she may have read about a new diagnostic technique or a new treatment, listen - keep an open mind. But remember: in CFS, as in nearly all diseases, truly useful information will be bought the hard way: basic laboratory investigation and well-controlled clinical trials.

In the meantime, both physicians and patients need to heed that ancient warning: *caveat emptor!*

---CSB

REFERENCES

1. Buchwald D, Sullivan JL, Komaroff AL. Frequency of 'chronic active Epstein-Barr virus infection' in a general medical practice. *JAMA* 257: 2303-2307, 1987.
2. Shaffran SD: The chronic fatigue syndrome. *Am J Med* 90: 730-739, 1991.
3. Bryan CS: Non-lyme disease. *J SC Med Assoc* 87: 433-436, 1991.
4. Peterson PK, Chao CC, Molitor T, et al: Stress and pathogenesis of infectious disease. *Rev Infect Dis* 13: 710-720, 1991.
5. Imboden JB, Canter A, Cluff LE: Convalescence from influenza: a study of the psychological and clinical determinants. *Arch Intern Med* 108: 115-121, 1961.
6. Straus SE. The chronic mononucleosis syndrome. *J Infect Dis* 157: 405-412, 1988.
7. Levine PH, Krueger GRF, Straus SE. The postviral chronic fatigue syndrome: a roundtable. *J Infect Dis* 160: 722-724, 1989.
8. Landay AL, Jessop C, Lennette ET, et al: Chronic fatigue syndrome: clinical condition associated with immune activation. *Lancet* 338: 707-712, 1991.
9. Lane TJ, Manu P, Matthews DA. Depression and somatization in the chronic fatigue syndrome. *Am J Med* 91: 335-344, 1991.
10. Vaillant GE. *Adaptation to Life: How the Best and the Brightest Came of Age* (Boston: Little, Brown and Company, 1977).

CARDIAC REHABILITATION - WHAT KIND OF EXERCISE?

Guest editorials reflect the opinions of the author and not necessarily the opinions of the Editorial Board and the SCMA Board of Trustees.

When caring for a patient who has sustained a myocardial infarction (MI) or undergone coronary by-pass surgery, the physician is first challenged to help the individual obtain an optimal functional capacity, and next to prevent future cardiac events from occurring. Cardiac rehabilitation programs afford a structured, multi-disciplinary approach to these goals, and, as in other modes of therapy, advances are continually being made.

In this issue of *The Journal*, Sword¹ discusses the potential value of resistance training for selected post-MI patients. At first glance, resistance training might seem counter-productive in patients with coronary artery disease, the major concern being an increase in ischemia with exacerbations of angina and cardiac arrhythmias. However, training with light work-loads seems to be well tolerated, is no more stressful than aerobic work, and can offer significant gains in strength to an undertrained patient. This gain in strength may well allow individuals to carry out their normal daily activities with less effort and less cardiac work.

A strong theoretical argument for resistance training rises from the observation that many patients are quite active at work or in their recreational activities. It would seem to be better to allow them to establish both aerobic and resistance goals, and then to monitor them carefully over their training period. If there should be an inappropriate elevation of blood pressure, or if angina or arrhythmias are exacerbated, these abnormalities could be detected early and brought to the attention of the physician, rather than have them occur under unmonitored or uncontrolled circumstances where the patient would not have quick access to medical care.

In South Carolina, our cardiac rehabilitation programs are fortunate to have staff members

formally trained in exercise physiology. The expertise of these exercise physiologists enables patients to have an individualized prescription for specific, appropriate, and safe exercise. The cornerstone of this prescription is traditional aerobic activity.² Appropriate aerobic training offers the group of participating patients a 20-25 percent chance of decreased morbidity and mortality.³ In many cases, the adiunctive use of carefully supervised and monitored resistance training can facilitate our patients' return to a full and productive life.

I encourage the physicians in South Carolina to become more familiar with the capabilities of our excellent community cardiac rehabilitation programs, and to take advantage of these programs' sophisticated abilities to assist in the management of our cardiac patients.

Christie B. Hopkins, M. D.
USC School of Medicine
2 Richland Medical Park
Suite 502
Columbia, SC 29203

REFERENCES

1. Sword DO. Resistance training in cardiac rehabilitation: risks, benefits, and recommendations. *J SC Med Assoc* 1992; 88: No. 2, 65.
2. McHenry PL, Ellestad MH, Fletcher GF, Froelicher V, Hartley H, Mitchell JH, Froelicher ESS. Statement on exercise: a position statement for health professionals by the committee on exercise and cardiac rehabilitation of the council on clinical cardiology, American Heart Association. *Circulation* 1990;81:396-8.
3. O'Conner GT, Buring JE, Yusuf S, Goldhaber SZ, Olmstead EM, Paffenbarger RS, Hennekens CH. An overview of randomized trials of rehabilitation with exercise after myocardial infarction. *Circulation* 1989;80:234-44.

On the Cover:

CHARLES MAYRANT REES, M.D. 1862-1913, PRESIDENT SCMA, 1913

Dr. C.M. Rees, 47th president of the South Carolina Medical Association, was born in Statesburg during the dark days of the Civil War. He was educated in the public schools of Sumter County, at the Holy Communion Church Institute (later named Porter Military Academy), and at Kirkwood High School in Georgia before earning his degree in pharmacy from the Medical College of the State of South Carolina in 1883. He immediately enrolled in the study of medicine while working as druggist at the City Hospital on Queen Street, Charleston (erstwhile the original Roper Hospital). Twelve days after the original shock of the earthquake of 1886 which essentially destroyed the hospital, our pharmacist/medical student wrote his mother that he was "quite well...and thankful and consider myself fortunate to have made the escape I did." He further wrote that he "tried to find pleasure in relieving others...(and) have been steadily on the go." In the move out of the damaged hospital Dr. Rees had lost "a good many of my clothes and I am afraid most of my books and diploma." He went on to earn his M.D. the following year, receiving honorable mention and winning the prize for the best written report on diseases of the eye and ear.

Dr. Rees remained in Charleston for the rest of his life, practicing medicine on Wentworth Street and holding various appointments at



FIGURE. Office of Dr. C. M. Rees at 89 1/2 Wentworth Street.

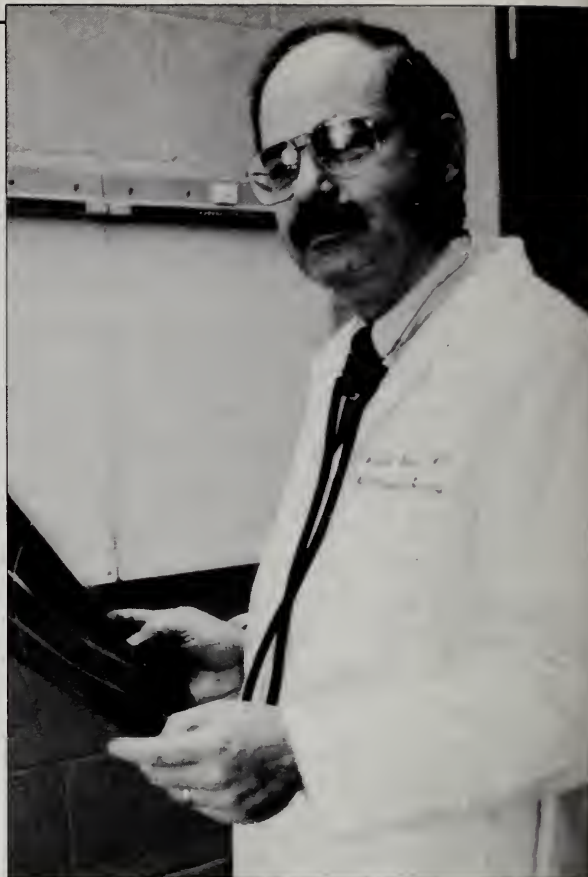
City and Roper Hospitals. He held the chair of Surgery in the medical college and was active in many local, state and national medical organizations.

Classes at the Medical College of the State of South Carolina were suspended for one day at his death. The Board of Trustees expressed its appreciation "of Dr. Rees' worth as a man, as a professor in the institution, and as a physician, and...the deep loss which they sustained in his passing."

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President's Page

HEALTHCARE REFORM - THE CONTINUING DEBATE

Healthcare reform ranks as a priority issue for America. Media are setting the agenda, with daily reports on the "crisis" in our healthcare system. President Bush has presented a proposal similar to the AMA's, which has been criticized for inadequate cost-control measures. Despite inadequacies, it will serve as a basis for continued debate.

In March 1990, the AMA presented Health Access America (HAA), the first major proposal for healthcare reform. HAA was developed to "insure access to the benefits of the American healthcare system for every citizen." The AMA has continued to refine its proposal and has stressed the need for a solution that builds on the strengths of our current system, rather than dismantling it in favor of a government-run, budget-driven, centrally-controlled system. Although access for the 37 million uninsured was the major thrust of HAA, at least nine of the 16 major points were designed to help control costs. At the December Interim Meeting, the AMA delegates requested that the Board of Trustees report back this June with specific cost containment recommendations.

The numerous proposals before Congress point out the problems inherent in any major reform. All parties are beginning to agree on the problems, but not the solution. Everybody wants accessibility, quality, affordability and security, but what is the American public willing to sacrifice? The weakness of all the proposals is a lack of realistic cost containment measures. Neither political party has been willing to confront the difficult problem of rationing.

My Congressman supports the Russo Bill, which offers Canadian-style universal coverage for all, comprehensive benefits, no deductibles, no co-insurance, freedom of choice, and all paid by a six percent payroll tax. Severe rationing and/or bankruptcy would surely result.

Representative Billy Houck, a retired physician from Florence, has submitted a bill to the South Carolina Legislature that would establish a State Health Services Cost Review Commission. Although it is difficult to be enthusiastic about establishing another state commission with a million dollar budget, the SCMA Board of Trustees supports Dr. Houck's bill as a first step in cost containment. (See SCMA Newsletter - Blue pages)

Last month my colleague, Dave, stopped me in the hall and asked what the AMA was doing about these healthcare proposals. He recognized that healthcare costs are too high and that the medical profession must develop a workable plan to present to the American people. Otherwise some draconian system may well result. Dave is not an AMA member, and yet he looks to the AMA for leadership. He considered the AMA "reactionary," and yet the AMA had the first major proposal for healthcare reform. Perhaps the "crisis" will convince Dave and other physicians to join the AMA and support the only voice the medical profession has in this debate.

Recently a non-physician friend mentioned that it must be very difficult to practice medicine today, when the future framework of the profession is uncertain. I responded that we still have the opportunity and the challenge to be good physicians, to provide compassionate and cost-effective care. We should enjoy the opportunity and meet that challenge.

J. Chris Hawk, III, M. D.
President

P.S. To Dave and others: Why don't you use your malpractice premium rebate from the JUA to join the AMA!

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EDITOR

Charles S. Bryan, M.D.
SCMA, P.O. Box 11188
Columbia, S.C. 29211

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CARCINOMA OF THE ESOPHAGUS: BASIS FOR HOPE

HARRY B. GREGORIE, JR., M. D.*

Carcinoma of the esophagus does permit long term cure in some patients. Personal experiences and studies in over a 30-year period of work with carcinoma of the esophagus are drawn upon to frame this report. In South Carolina, this disorder is strikingly common among black males. There is an incidence of 51 per 100,000 in Charleston County.¹ Many unanswered therapeutic issues remain for elucidation by long term double blind studies of significant numbers of these patients. This report lacks that but does draw upon extensive numbers and experiences with carcinoma of the esophagus.

OBSERVATIONS

In 1976, in a study with Dr. Edward F. Parker, we described treatment in 609 patients.² In one group of 170 patients, surgery alone provided two years' survival of only 0.6%, radiation alone in 166 of five percent, and combination of such therapy in 273 of 10 percent two years' survival. In a large retrospective study by Earlam, one-year survival

with either approach was 18 percent; at five years only four percent were alive.^{3,4}

Prior to 1984, a study of 50 consecutive patients in my practice has yielded a five-year survival of 22 percent with the average survival time being 14 years. From autopsy studies, only a 27 percent survival is possible in that an evaluation of many patients showed that 73 percent had disseminated metastatic disease at diagnosis, despite the brief duration of illness.^{5, 6, 7} Perhaps combined modalities will alter this more favorably in the future, especially with chemotherapy.

Since 1984, preoperative chemotherapy has been utilized in 12 patients to achieve significant reduction in tumor size. This has been most pronounced in those having squamous carcinoma but also in some with adenocarcinoma. Nine are alive but the duration of survival and numbers are insufficient to permit conclusions except to indicate that this approach seems to offer better early survival potential. The median duration of response for chemotherapy alone is only seven months.⁸ The median survival in our preliminary chemotherapy surgery series is two years.

*158 Rutledge Avenue, Charleston, SC 29403.

In this series of 50 patients prior to 1984, 40 had squamous and 10 adenocarcinomas of the esophagus. Nine (18%) are alive averaging seven years: five squamous and four adenocarcinomas. Among 11 (22%) having long term survival, the average survival time was 14 years. In all there was squamous carcinoma and all received preoperative radiation therapy of 4500 rads tumor dose in four weeks' time. The esophagus was replaced by colon in five of the patients and by stomach in six. None had chemotherapy, positive nodes, close margins of resection or undifferentiated carcinoma.

DISCUSSION

The notoriously dismal course in carcinoma of the esophagus relates to early metastatic potential, aggressive behavior of undifferentiated malignancies, delayed diagnosis and initial failure of physician recognition, association of conterminous malignancies, or other perimortal illnesses, and especially unskilled management of the problem.

Earlier diagnosis may derive from enhanced awareness of symptoms of dysphagia, substernal distress with sensation of pressure, fullness, or pain on swallowing, and regurgitation. Prompt, and if necessary, repeated double contrast barium swallow and esophagoscopy with brush cytology and biopsy will usually provide diagnosis. Cytologic screening and endoscopy among high risk groups with achalasia, lye strictures, webs and Barretts esophagus are advisable annually. It should be stressed that it is important to have a proper index of suspicion, an understanding of the symptoms and an awareness that physical findings are lacking early.

Some good studies challenge the use of postoperative radiation therapy as reported by Teniere in 1991.⁹ While advocating preoperative therapy over the years, in the light of this report and others, we must reexamine our proposal for such therapy.^{10, 11}

Experienced selection and management of patients is considered a reasonable explanation for the better than usual survival in this 22 percent long-term survival result.

Indications for operation and resection are based on a satisfactory nutritional state, strength, appetite, stable weight, a lesion length less than 9cm, absence of invasion of trachea or bronchi, absence of distant metastasis and absence of serious associated diseases such as renal, cardiopulmonary, hepatic or central nervous system.

Contraindications to operation are malnutrition, vocal-cord palsy, mediastinitis with or without abscess, esophagotracheal or bronchial fistula with certain exceptions and distance metastasis or serious associated diseases.

In a patient with the ability to swallow, surgery would not be advised in the presence of the contraindications except with acute tracheal or bronchial fistula, in which case emergency bypass may be considered to prevent uncontrolled cough and suppurative pulmonary disease.

In a patient unable to swallow, palliative resection and replacement or bypass is to be considered along with intraluminal plastic tube stenting or laser coring of the neoplasm to restore swallowing.

In those patients in which operation remains contraindicated after chemotherapy or radiation of 4500 rads, additional radiation therapy to a tumor dose of 6000 rads is often administered for loco-regional disease.

Regardless of the lesion level, single-stage operation through separate laparotomy and thoracotomy incisions is generally applied. The lower esophageal lesions can be approached through the left chest and all others through the right chest. If an anastomosis is required in the neck, careful protection of the recurrent laryngeal nerves is important and a right cervical incision is used. The abdomen is generally explored first. If metastasis to the lymph nodes or liver preclude cure, nothing further is done if the

patient can swallow. If unable to swallow, palliative resection or bypass may be done. In cases of carcinoma of the cervical esophagus, control may be better obtained by chemotherapy and radiation.

Restoration of continuity generally finds the stomach the simplest procedure and perhaps the safest. Colon is used when extensive length is to be replaced and when the stomach cannot be used. Complications have seemed to be few with this approach and certainly are more prominent by use of jejunum which is very infrequently done. The techniques for the use of the stomach and colon have been previously described.^{12, 13}

SUMMARY

On the basis of this experience and results, the frequently expressed idea that one should seek primarily only palliative measures in carcinoma of the esophagus is decried. While it is impossible to predict the outcome in many individual cases, it is also apparent that gratifying long-term results in addition to palliation can be achieved if one is perseverant and persistent in the application of sound principles in the management of this disorder. It is obvious that earlier diagnosis leads to better outcome and it is felt that this is gradually being seen. When the disease is extensive and not amenable to standard therapeutic approach, one hopes that with improved lasers, immunologic therapy and chemotherapy there will be additional hope.

This report documents the merits of surgery and radiation combined for loco-regional carcinoma of the esophagus. □

REFERENCES

1. Bates DC, Caston JC, O'Brien P and Sandifer SH: Journal of the SC Medical Association. 67:453; 1971.
2. Parker EF, Gregorie HB: Carcinoma of the Esophagus. JAMA 235: 1018, 1976.
3. Earlam R, Cunha-Melo JR: Oesophageal squamous cell carcinoma of the esophagus: A critical review of surgery. Brit. J Surgery. 67: 381, 1980.
4. Earlam R, Cunha-Melo JR: Oesophageal squamous cell carcinoma of the esophagus: A critical review of radiotherapy. Brit. J Surgery. 67:457, 1980.
5. Anderson LT: Autopsy findings in squamous cell carcinoma of the esophagus. Cancer 50: 1587, 1982.
6. Mannard A, Chasel J, Marney T, et al: Autopsy findings in 111 cases of esophageal cancer. Cancer 48: 329, 1981.
7. Bosch A, Frias Z, Caldwell W, Jaesch LW: Autopsy findings in carcinoma of the esophagus. Acta Radiol. Oncol 18: 103, 1979.
8. Kelsen D, Bains M, Hilaris B, Martin N: Combined Modality Therapy of Esophageal Cancer. Seminars in Oncology 11: 169, 1984.
9. Teniere P, Hay DM, Fingerhut A, Fagniez PL: Post-operative radiation therapy does not increase survival after curative resection for squamous cell carcinoma of the middle and lower esophagus as shown by a multi-center controlled trial. S. G & O. 173: 123, 1991.
10. Huang GJ, Etu X2, Wang LJ, et al: Experience with combined pre-operative irradiation and surgery for carcinoma of the esophagus. G. Ann. Monograph Cancer Research. 31: 159, 1986.
11. Launois B, Delarue D, Campion, JP et al: Pre-operative radiotherapy for carcinoma of the esophagus. S, G & O. 153: 690-692, 1981.
12. Parker EF, Gregorie HB, Jr.: Carcinoma of the esophagus. Curr Probl. Surg. April 1967.
13. Clowes GHA, Jr, Neville WE, Gregorie HB, Jr.: Esophageal resection and replacement with a segment of colon in Cooper P (Ed.) The craft of surgery. Boston: Little, Brown & Co. Volume 1: 148, 1964.
14. Gregorie HB, Jr.: Esophagocoloplasty. Annals of Surgery. 175: 740, 1972.

LIPOPROTEIN PROFILING FOR THE 1990s SHOULD INCLUDE LIPOPROTEIN(a), ANOTHER IMPORTANT APO B-100 CONTAINING CHOLESTEROL CARRIER

KARL DOETSCH, PH.D*

The use of lipoprotein/apolipoprotein laboratory profiles enables clinicians to diagnose and manage cardiovascular disease more definitively. Apolipoprotein AI (apo AI) is an indicator of high density lipoproteins (HDL), or the "GOOD" cholesterol carriers, while apolipoprotein B-100 (apo B) is present in the "BAD" cholesterol carriers. Besides low density lipoproteins (LDL), there is another class of apo B containing "BAD" cholesterol carriers. It is the recently designated genetically controlled Lipoprotein(a), or Lp(a).¹ Lp(a) presently is the most important known genetically controlled **independent** risk factor for prediction of early atherosclerosis (AS) that leads not only to coronary artery disease (CAD)² but also to cerebral infarction (CI).³ This is true for a significant subpopulation of Caucasians of northern European descent, and perhaps in other racial and ethnic population groups as well.

Lp(a) is a LDL-like particle that contains an additional glycoapolipoprotein, apolipoprotein(a), or apo(a). One or more apo(a) units are attached to the apoB-100 of the LDL-like particle by one or more disulfide bonds. Although it is a cholesterol carrier like LDL, the apo(a) moiety gives Lp(a) biochemical properties that are distinctly different from LDL. Lp(a) is found in a broad range of ultracentrifuge fractions including the density 1.21 g per ml.

Because of this great heterogeneity it

contaminates the other lipoprotein fractions that contain LDL and HDL. The richest Lp(a) fraction, 1.05 to 1.08 g per ml, overlaps considerably with HDL. When LDL and Lp(a) concentrations are within the population "reference ranges," Lp(a) carries about 12 percent of the plasma cholesterol compared to about 65 percent for LDL. HDL carries 15 percent of plasma cholesterol and has a role in the process referred to as "reverse cholesterol transport."

The specific biological and pathological functions of Lp(a) still are not known. It is thought to carry cholesterol to peripheral cells, perhaps secondary to the role of LDL. Biosynthesis of Lp(a) is under strict genetic control. In the absence of metabolic derangements plasma Lp(a) concentrations are governed solely by the rate of synthesis in the liver. Its subsequent metabolism, however, is influenced dramatically by the hydrophilic carbohydrate-rich apo(a) constituent. Degradation of Lp(a) by the "protective" LDL receptor mechanism probably is minor, while catabolism by the "atherogenic" non-specific "scavenger" receptor pathway likely is the predominant route. The dramatically increased virulence of AS experienced by those unfortunate individuals who have concurrently elevated plasma concentrations of LDL and Lp(a) may be the result of competition for (or blocking of) the LDL receptor by Lp(a). The subsequent competition of LDL and Lp(a) for the remaining "scavenger" receptor route may raise the circulating plasma concentrations of

*Laboratory Medical Sciences, Inc., 1220 Kelving Way, Wharton, TX 77488.

these lipoproteins and also may enhance the activity of the intracellular mechanism that causes atherogenesis. Uterman and coworkers⁶ report that subjects with familial hypercholesterolemia have three-fold higher plasma Lp(a) levels than controls. These findings cannot be explained by differences in apo(a) phenotype frequencies.²⁵ It is likely that a catabolic relationship exists between LDL and Lp(a) and that the higher plasma Lp(a) levels in subjects with familial hypercholesterolemia may be a direct consequence of their elevated plasma LDL concentrations. It seems reasonable to hypothesize that in the absence of adequate LDL receptor function the LDL may compete with Lp(a) for the alternate "scavenger" receptor catabolic route. As LDL concentrations may be ten to fifty-fold higher than Lp(a) concentrations, LDL may effectively prevent, or at least dramatically reduce, the catabolism of Lp(a) by this mechanism. If production proceeds at a constant rate, this might explain the concurrently elevated plasma Lp(a) levels seen in these subjects.

Another fascinating area of Lp(a) speculation is derived from its resemblance to the serine proteases present in plasma. Lp(a) may provide the long sought link among lipoproteins, the plasma coagulation system, and atherogenesis! As apo(a) has a great deal of structural homology with plasminogen,⁷ one may speculate that Lp(a) can bind to fibrin, or to the tissue plasminogen binding site⁸ and thereby block the proteolytic conversion of plasminogen to plasmin by tissue plasminogen activator (TPA). This would prevent the normal lysis of fibrin clots. Subsequently this raises the question if this could be the initiating event of the formation of an atheroma! The frenzy of research activity in this area soon will unlock these secrets.

Researchers have shown that increased plasma Lp(a) concentrations are associated strongly with early myocardial infarction

(MI) and cerebral infarction in white men younger than 56 years.^{4,5} Moreover, elevated plasma Lp(a) levels are common among patients with abdominal aortic aneurysms,⁹ among patients with vein graft stenosis after coronary artery bypass surgery,¹⁰ and among hemodialysis patients with chronic renal failure.¹¹ But we must note that presently available epidemiologic studies have been performed extensively in Caucasians and to a lesser degree in the Japanese. Conclusive epidemiologic studies in other defined racial and ethnic populations still are inadequate or nonexistent. It is certain, however, that *clinical laboratory reference ranges determined for whites may not be used indiscriminantly to interpret plasma Lp(a) values for other population groups at risk*. The plasma Lp(a) frequency distributions and percentiles greater than the arbitrarily set limit of 300 mg per L vary dramatically among different racial groups (Table I). For example, 20 percent of whites have plasma Lp(a) values above 300 mg per L, but blacks and white **type II** diabetics have about 60 percent of their Lp(a) values above this interpretative limit. Yet white **type I**

TABLE I
COMPARATIVE FREQUENCIES OF
PLASMA Lp(a) CONCENTRATIONS
ABOVE 300mg/L
FOUND IN DIFFERENT
RACIAL/ETHNIC GROUPS

Easter Island Natives (27)	2%
Labrador Indians (27)	8%
Singapore Chinese (24)	4%
Singapore Indians (24)	15%
South American Indians (27)	20%
Japanese (28)	20%
Whites (28)	20%
White Type I Diabetics (14)	20%
White Type II Diabetics (14)	60%
Blacks (12)	60%
Sudanese (24)	80%

diabetics demonstrate the identical frequency distribution as the general white population at risk.¹³ Furthermore, Lp(a) levels in cord blood barely are detectable in 75 percent of samples from white or black newborns. Of a group of 126 white newborns tested, only two percent had cord blood Lp(a) values above 100 mg per L. Moreover, early developmental changes in plasma Lp(a) concentrations are different than for the apo B or apo AI apolipoproteins.¹⁴⁻¹⁶

Moreover, it is important to know that popular medications commonly used to lower plasma LDL and apo B, for example Lovastatin®, may not beneficially alter plasma Lp(a) levels.¹⁷ Thus far, only niacin and neomycin are found to lower plasma Lp(a) levels therapeutically.^{18, 19} Manipulation of diet and other environmental elements that affect LDL do not alter plasma Lp(a) levels.^{1, 2} Although anabolic steroid medications also inadvertently and dramatically lower plasma Lp(a) levels,^{14, 20} the mechanism and side-effects are not well understood. These steroids are not choices for intervention. And finally, endocrine system aberrations also may affect the plasma levels of this mysterious lipoprotein, Lp(a).²¹

At this time prediction of the relative risk for cardiovascular or cerebrovascular accident is best determined from a positive family history combined with laboratory testing for plasma levels of apo AI, apo B, and Lp(a). Interpretation of the laboratory data, however, becomes more complex. Even though estimation of plasma HDL from apo AI measurements gives a good indication of "GOOD" cholesterol, the use of total apo B concentration to estimate plasma LDL as the only indicator of "BAD" cholesterol may be highly misleading in a significant sub-population of white men (and likely white women and other groups at risk). This group has normal plasma LDL levels and a concurrent malignantly elevated plasma Lp(a) concentration. This is because "BAD" cholesterol is made up of two apo B con-

taining lipoproteins, LDL and Lp(a)! But the relative normal plasma concentrations of these apo B containing lipoproteins may differ by fifty-fold or greater. (Medians are: LDL=4000 mg per L; Lp(a)=80 mg per L.) For whites, the biological range of plasma Lp(a) is highly skewed toward the higher concentrations. Values may be less than 10 mg per L or greater than 2500 mg per L. Moreover, while apo B comprises @20% of LDL total mass, this important apolipoprotein makes up only @10% of Lp(a) total mass. Therefore a substantial number of patients who may have normal plasma LDL concentrations and malignantly elevated plasma Lp(a) levels also may present with plasma apo B values within the normal reference limits. But actually the relative risk for early MI in these individuals may be greatly increased. For example, when plasma LDL are 2500 mg per L and Lp(a) is 1000 mg per L, the total plasma apo B determined is @600 mg per L. (The apo B derived from Lp(a) is @17% of the total.) This apo B value is in the lower region of the clinical reference range and presently would be interpreted to indicate normal (lipoprotein contributed) relative risk for early CAD. Indeed, this would result in a false negative clinical classification because it is based only on the apo B/LDL relationship without consideration of Lp(a).

It should be apparent that plasma apo B concentrations can be interpreted most accurately when combined with knowledge of concurrent plasma Lp(a) concentrations. The LDL derived apo B contribution can be calculated by subtracting the Lp(a) apo B contribution from the total plasma apo B value. This allows both a more accurate estimation of the plasma LDL value and a highly relevant calculation of the Lp(a) / LDL relationship. This is clinically valuable because not only is an elevated plasma Lp(a) level an important independent risk factor, but the combination of an elevated LDL and Lp(a) exponentially increases this relative

risk!²²

In summary, clinical reference ranges for plasma Lp(a) values that are determined for White populations at risk **may not** be used (without appropriate further study) to interpret Lp(a) values for other population groups. Moreover, the Baye's theorem model as adapted to clinical medicine by Galen²³ needs to be applied to all epidemiologic studies of lipoproteins in order that the most sensitive and specific predictive value clinical interpretations of these laboratory data can be made. Normal plasma apo B levels may indicate normal plasma LDL concentrations, but omit the contribution of Lp(a) as a highly malignant "BAD" cholesterol carrier. For more accurate prediction of relative risk of early AS and CAD the actual LDL and Lp(a) values offer greater accuracy than uncorrected total apo B measurements. In the 1990s, laboratory tests for any individual that presents with a strong family history of early atherosclerotic CAD, or rapid recurrence of graft occlusion following cardiac surgery, should include apo AI, apo B, and Lp(a). The Lp(a) story is not yet complete, however. Eventually, only specific phenotypes of Lp(a) may be found to be causally associated with the atherosclerotic process.^{24, 25} But even now the use of apo AI, apo B, and Lp(a) data will allow a more sensitive and specific diagnosis and management of cardiac disease than offered by the lipid profiles of the past decade. And testing of children who have a positive family histories may identify those individuals at greatest risk for developing early cardiovascular disease in time for effective intervention.²⁶ □

REFERENCES

1. Sandkamp M, Funke H, Schulte H, Kohler E, Assmann G. Lipoprotein(a) is an independent risk factor for myocardial infarction at a young age. *Clin Chem* 1990; 36:20-23.
2. Hoeffler G, Harnoncourt F, Paschke E, Mirtl W, Pfeiffer KH, Kostner GM. Lipoprotein Lp(a). A risk factor for myocardial infarction. *Arteriosclerosis* 1988; 8:398-401.
3. Zenker G, Koltringer P, Bone G, Niederkorn K, Pfeiffer K, Jurgens G. Lipoprotein(a) as a strong indicator for cerebrovascular disease. *Stroke* 1986; 17:942-945.
4. Dahlen GH, Guyton JR, Altav M, Patsch W, Kautz JA, Gotto AM Jr. Association of levels of lipoprotein Lp(a), plasma lipids, and other lipoproteins with coronary artery disease documented by angiography. *Circul* 1986; 74:758-766.
5. Koltringer P, Jurgens G. A dominant role for lipoprotein (a) in the investigation and evaluation of parameters indicating the development of cervical atherosclerosis. *Atherosclerosis* 1985; 58:187-193.
6. Utermann G, Hopplichler F, Dieplinger H, Seed M, Thompson G, Boerwinkle E. Defects in the low density lipoprotein receptor gene affect lipoprotein(a) levels: multiplicative interaction of two gene loci associated with premature atherosclerosis. *Proc Natl Acad Sci* 1989; 86:4171-4174.
7. Loscalzo J, Weinfeld M, Fless GM, Scanu AM. Lipoprotein(a), fibrin binding, and plasminogen activation. *Arteriosclerosis* 1990; 10:240-245.
8. Gonzalez-Gronow M, Edelberg, JM, Pizzo SV. Further characterization of the cellular plasminogen binding site: evidence that plasminogen 2 and lipoprotein(a) compete for the same site. *Biochem* 1989; 28:2374-2377.
9. Norrgard O, Angquist K-A, Dahlen G. High concentrations of Lp(a) lipoprotein in serum are common among patients with abdominal aortic aneurysms. *Internal Angiology* 1988; 7:46-49.
10. Hoff HF, Beck GJ, Skibinski CI, Jurgens J, O'Neil J, Kramer J, Lytle, B. Serum Lp(a) level as a predictor of vein graft stenosis after coronary artery bypass surgery in patients. *Circulation* 1988; 77:1238-1244.
11. Parra HJ, Mezdoor H, Cachera C, Dracon M, Tacquet A, Fruchart JC. Lp(a) lipoprotein in patients with chronic renal failure treated by hemodialysis. *Clin Chem* 1987; 33:721.
12. Parra H-J, Luyeye I, Bouramoue C, Demarquilly C, Fruchart J-C. Black-White differences in serum Lp(a) lipoprotein levels. *Clin Chim Acta* 1987; 167:27-31.
13. Doetsch K, Roheim PS, Thompson JJ. A 'capture' ELISA immunoassay for human Lp(a) lipoprotein. *Clin Chem* 1988; 34:1229(Abstract).
14. Doetsch K. Dissertation, L.S.U. Medical Center, New Orleans, La; Dec. 1989.
15. Rifai N, Iosefsohn M, Heiss G, Doetsch K. Serum lipoprotein(a) concentration changes in the first 5 years of life. *Clin Chem* 1990; 36:966(Abstract).
16. Rifai N, Heiss G, Whitaker E. Gender and race differences in cord blood lipoproteins. *Clin Chem*

- 1988; 34:1231(Abstract).
17. Vessby B, Kostner G, Lithell H, Thomas J. Diverging effects of cholestyramine on apolipoprotein B and lipoprotein Lp(a). *Atherosclerosis* 1982; 44:61-71.
 18. Carlson LA, Hamsten A, Splund A. Pronounced lowering of serum levels of lipoprotein Lp(a) in hyperlipidaemic subjects treated with nicotinic acid. *J Int Med* 1989; 226:271-276.
 19. Guraker A, Hoeg JM, Kostner G, et al. Levels of lipoprotein Lp(a) decline with neomycin and niacin treatment. *Atherosclerosis* 1985; 57:293-301.
 20. Albers J, Taggart H, Applebaum-Bowden D, Cabana VG, Warnick GR, Hazzard WR. Reduction of lecithin-cholesterol transferase, apolipoprotein D, and the Lp(a) lipoprotein with the anabolic steroid stanozolol. *Biochem Biophys Acta* 1984; 795:293-296.
 21. Morrisett JD, Guyton JR, Gaubatz JW, Gotto, Jr AM. Lipoprotein(a): structure, metabolism and epidemiology. In: Gotto, Jr, AM, ed. *Plasma Lipoproteins*. New York: Elsevier, 1987:158-178.
 22. Armstrong, VW, Cremer, P, Eberle, E, et al. The association between serum Lp(a) concentrations and angiographically assessed coronary atherosclerosis: dependence on serum LDL levels. *Atherosclerosis* 1986; 62:249-257.
 23. Galen R. Predictive value theory. *Diag Med* 1979; Feb:23-31.
 24. Utermann G. The mysteries of lipoprotein(a). *Science* 1989; 246:904-910.
 25. Utermann G, Kraft HG, Menzel HJ, Hopferwieser T, Seitz C. Genetics of the quantitative LLP(a) trait I relation of Lp(a) glycoprotein phenotype to Lp(a) lipoprotein concentrations in plasma. *Hum Genet* 1988; 78:41-46.
 26. Berensen GS, Sriisivasen SR, Nicklas TA, Webber LS. Cardiovascular risk factors in children and early prevention of heart disease. *Cli Chem* 1988; 34 suppl:B115-B117.
 27. Berg K. Inherited lipoprotein variation and atherosclerotic disease. In Scanu AM, Wissler RW, Getz GS, Eds., *Biochemistry of Atherosclerosis*, Dekker, New York 1979: 419.
 28. Morton NE, Berg K, Dahlen G. Genetics of the Lp lipoprotein in Japanese-Americans. *Genet Epid* 1985; 2:113-120.

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SCMA NEWSLETTER

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Joy Drennen, Editor
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1-800-327-1021, outside Columbia

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MEDICARE UPDATE

Coding: HCFA is requiring the carriers to perform educational audits on the new coding rules. BC/BS of SC will contact you to inform you if your records have been selected for postpayment review; based on the coding rules and vignettes developed by the specialty societies in conjunction with the AMA, your documentation will be reviewed and compared to the codes you selected. You will be informed if the carrier believes you coded correctly. The carrier will also conduct computer analysis by specialty to identify patterns of coding and then will request records from physicians with unusual patterns of coding or use of modifiers.

Reminder: The BC/BS Medicare Advisory entitled "Physician Payment Reform Update" (December, 1991) contained the Medicare global surgery rules and other helpful information.

Modifier 24 (unrelated evaluation and management by the same physician during a post-op period): Use of this modifier is required if you performed a procedure which is subject to the global rules and then also provided E/M care for the patient. HCFA's instructions to the carriers indicate that a diagnosis can be sufficient documentation in some cases; if the documentation for the care is not obviously different from that necessitating the procedure, you will need to submit documentation with the claim.

Modifier 25 (significant, separately identifiable E/M service provided by the same physician on the day of a procedure): You are not required to submit documentation with the claim; however, the carrier will monitor use of this modifier on a selected, postpayment basis.

Modifier 79 (unrelated procedure by the same physician during the post-op period): You are not required to submit documentation with the claim; however, the carrier will monitor use of this modifier on a selected, postpayment basis.

Prepayment Edits: For services performed on or after January 1, 1992, all prepayment edits will be eliminated which relate to E/M codes (e.g., prepayment edits limiting the number of higher level E/M visits have been eliminated); however, proper coding is subject to postpayment audits.

Physician's Choice of Codes: You may choose whether to bill a discharge visit code or a subsequent hospital visit code on the day of discharge. For critically ill patients, you may choose whether to use a critical care code which includes reimbursement for specified services or you may use a hospital visit code and bill separately for these services.

Consults: In order to bill a consult, there must be a specific request for your care by a physician. According to an AAFP newsletter, if you are called to the emergency room by the on call physician to treat a patient, you may use an office consult code (if the patient is not admitted). If a surgeon refers a patient to a family physician for a pre-operative evaluation, a consult code may be used.

Vitamin B12 Injections: Vitamin B12 injections are considered specific therapy and therefore covered for the following conditions: certain anemias; pernicious anemia (Addisonian anemia); megaloblastic anemia, if secondary to B12 deficiency; fish tapeworm anemia; certain gastrointestinal disorders; gastrectomy; malabsorption syndromes; surgical and mechanical disorders, i.e., resection of the small intestine, strictures, anastomoses and blind loop syndrome; certain neuropathies; posterolateral sclerosis; other neuropathies associated with pernicious anemia; and acute phase or acute exacerbation of a neuropathy due to malnutrition and alcoholism.

The following documentation should be submitted with the initial claim for the claim to be considered for reimbursement: Claims for pernicious anemia must

be accompanied by Schilling Test Part I and Part II or Serum B12 levels (at least two). Claims for all other anemias and disorders must be accompanied by Serum B12 levels (at least two).

Grace Period Expired: As you are aware, Medicare allowed physicians a grace period to use either the 1991 or 1992 CPT codes. This extension applied only to the evaluation and management codes. All other codes had to be from the 1992 CPT. With dates of service on or after March 1, 1992, the 1991 E/M codes are no longer accepted. The 1992 E/M codes

must be used. If you wish to use 1991 E/M codes for services rendered in January or February 1992, you must submit these claims before May 1.

HCFA 1500 Form: A Medicare advisory will be issued soon with final instructions for completing the new HCFA 1500 form. Please watch for this important advisory.

Direct Medicare questions to Cindy Osborn or Barbara Whittaker at SCMA Headquarters. ☐

MEDICAID UPDATE

HCFA 1500 Claim Forms: Medicaid will require the new HCFA 1500 claim forms beginning September 1, 1992. A bulletin including instructions for completion of the form will be forthcoming in the near future. Charges submitted before September 1, 1992 may be filed on either the HCFA-1500 (1-84 Rev.) or on the new claim form (12-90 Rev.). The new 2-digit place of service codes will also be required September 1, 1992. As of February 7, 1992, the old single-digit or new 2-digit place of service codes may be used for Medicaid claims regardless of which version of the HCFA-1500 claim form is submitted.

Anesthesia Consultations: Medicaid does not cover consultations by anesthesiologists on the same day anesthesia services are rendered. Reimbursement for pre-operative and post-operative consultations are included in the base payment for anesthesia services.

Emergency Intubation: Intubations by an anesthesiologist or CRNA in the emergency room or intensive care unit are payable if subsequent anesthesia services are not performed on the same

day. Claims for emergency intubation must be accompanied by support documentation.

Multiple Units Billing for Specified Dermatology Codes: Please refer to your January 31, 1992 Medicaid bulletin for new dermatology billing rules.

Pre-operative Surgery Guidelines: You may now bill for office visits up to and including the day of surgery.

Post-operative Surgery Guidelines: All charges incurred within 30 days are included in the global surgery fees unless there is a completely unrelated condition.

Use of the Professional Component Modifier: When submitted with place of service codes 1 or 2 (inpatient and outpatient hospital), all radiology procedure codes and anatomical pathology codes (88000 through 88199) must be billed with the -26 modifier. Procedure codes 85095 through 85109 do not require a -26 modifier and are the only pathology codes (except anatomical pathology) reimbursable in place of service 1 or 2. ☐

RBRVS TELECONFERENCE

On March 27, the AMA will host a nationwide teleconference, "Medicare Physician Payment Reform: A New System of Rules and Codes," featuring Gail Wilensky, PhD, HCFA Administrator, and James Todd, MD, AMA EVP. The program, airing 2:30-4:00 p.m., will address issues and questions on the new payment system and the new CPT codes. Any hospital on the Hospital Satellite Network will be able to receive this broadcast. If you are interested, please ask your Medical Staff Coordinator if arrangements can be made to view the teleconference. ☐

JUA/PCF UPDATE

The January issue of this newsletter advised that the JUA board had voted to distribute a \$6 million dividend to insureds on March 1. As this issue goes to press, JUA insureds should be receiving a cash dividend amounting to 55 percent of the premium paid in 1991. In addition, the PCF will give a credit on the 1992 premium which will represent 55 percent of the premium paid in 1991. The JUA Manager stated that these actions are possible because of the good financial conditions of both agencies and the accumulation of more than adequate reserve funds for the past several years, as well as good risk prophylactic efforts by physicians. ☐

H. BILL 4244—HEALTH CARE COST CONTAINMENT COMMISSION

The SCMA Legislative Committee and the Board of Trustees have endorsed bill H.4244 introduced by Representative Billy Houck, MD, which would establish a Health Care Cost Containment Commission. Because of the number of questions we have received, we wanted to inform you about some of the specifics of the bill and our reasons for supporting it.

The Cost Containment Commission would set charges for hospitals, nursing homes, physicians and a number of other providers; however, the commission would only have authority over physicians' charges for services provided in an acute care hospital or nursing home. The initial fees could not be reduced below the 90th percentile of the usual, customary and reasonable (UCR) charge for the specific service or procedure existing in the last 24 months. This means that the rate would cover the current charges of 90 percent of the physicians in the state.

The commission would be authorized to grant annual increases that would not exceed the inflation rate over the previous 12 months as established by the Consumer Price Index (CPI). Other provisions in the bill allow for special circumstances and flexibility in dealing with the Medicare and Medicaid programs.

The commission would be financed by an annual assessment on all providers which we anticipate to be in the range of \$100. The budget is currently set at \$1 million and future increases are limited to the CPI.

After careful study and consideration, the board voted to support the bill based on the following reasons: The problem of rising healthcare costs and limited access for many uninsured Americans has reached a critical point. This presidential election year has brought health care to the forefront and made it one of the top campaign issues. From President Bush and the U. S. Congress to our state legislature and the SC Hospital Association — everyone is proposing plans to cut costs and increase access. There is going to be a considerable change in the way health care is provided and that change will probably come very soon.

You cannot pick up a newspaper, watch the television, or listen to the radio without being bombarded by the problem of skyrocketing healthcare costs. The positive image of healthcare providers is declining. One way to change this is to show that we are working in the best interest of our patients. We, as physicians, must position ourselves to be part of the solution.

The bill is in a sub-committee of the 3M Committee and will not be acted on until the middle of March. The SCMA feels it is important to show the public and the politicians that we are concerned with the problem and are willing to make some concessions to bring healthcare costs under control.

If you have any further questions, please feel free to call the SCMA office and discuss them with Mr. Mahon. ☐

OSHA'S OCCUPATIONAL EXPOSURE TO BLOODBORNE PATHOGENS STANDARD

In previous issues of this newsletter, there have been announcements regarding OSHA's final standard on Occupational Exposure to Bloodborne Pathogens. In this issue, we have attempted to condense the nine-page standard and highlight the most important requirements. This list is not exhaustive. **It is extremely important that you read the entire standard as large fines will be charged for any violations.**

The standard covers all employees who have occupational exposure to blood and/or other potentially infectious materials. Occupational exposure means "reasonably anticipated contact with blood or other potentially infectious materials that may result from the performance of an employee's duties." It does not necessarily mean that the worker

has actually had a specific contact with these materials, only that there is the potential for such contact. This standard applies to all healthcare facilities.

I. EXPOSURE CONTROL PLAN

Employers are required to have a written plan which addresses each of the following:

- A. Exposure Determination - a list of all job classifications as well as tasks and procedures in which occupational exposure occurs.
- B. Schedule for implementing the other requirements of this standard.
- C. Procedure for handling exposure incidents

and evaluating circumstances surrounding them. (See section V.)

This plan must be completed by May 5, 1992 and must be available to employees and OSHA. The plan must be reviewed and updated annually.

II. METHODS OF COMPLIANCE

Mandates universal precautions, as published by the Centers for Disease Control (CDC), which states that all blood and certain body fluids must be treated as if infectious and spells out precautions that must be used when dealing with these fluids.

Employers must provide, at no cost, and require employees to use appropriate personal protective equipment (e.g. gloves, gowns, masks, etc...) Employers must also provide handwashing facilities and ensure that employees use them after removal of gloves and following contact with potentially infectious materials. A written schedule for cleaning is required as well as specific provisions for handling contaminated laundry.

III. HIV/HBV RESEARCH LABS AND PRODUCTION FACILITIES

These facilities must follow standard microbiological practices and additional practices are specified for employees working with concentrated viruses. Additional training and requirements apply to workers in these facilities. These provisions are listed in the standard.

IV. HEPATITIS B VACCINATION

HBV vaccines must be made available, at no cost, to all employees who have occupational exposure to potentially infectious materials. This must be done following training (see section VII) or within 10 days of assignment.

Employees must sign a declination form if they choose not to be vaccinated (see Appendix A of the standard.) If booster doses are later recommended by the U.S. Public Health Service, employees must be offered them at no cost.

V. POST-EXPOSURE EVALUATION AND FOLLOW UP

For employees who have had an exposure incident,

laboratory tests must be conducted by an accredited lab at no cost to the employee. Follow up must include a confidential medical evaluation. The standard specifies what must be included in this evaluation.

VI. HAZARD COMMUNICATION

Designates when and what type of warning labels are required for containers of regulated waste and other potentially infectious material. Signs must be used to identify restricted areas in HIV and HBV research labs.

VII. INFORMATION AND TRAINING

Training must be provided, at no cost and during working hours, for all employees with occupational exposure by June 4, 1992. It must be provided initially upon assignment and employees must receive an annual update. The standard provides a list of all topics to be covered in training sessions. The trainer must be knowledgeable in the subject matter.

VIII. RECORDKEEPING

Requires that medical records be kept for each employee with occupational exposure for the duration of employment plus 30 years. A list of all information required for the records is listed in the standard. Training records must be maintained for three years.

IMPLEMENTATION DATES

March 6, 1992	- Regulations become effective.
May 5, 1992	- Written Exposure Control Plan must be completed.
June 4, 1992	- Employee training must be completed; information and recordkeeping systems in place.
July 6, 1992	- Engineering, work practice controls, personal protective equipment, housekeeping procedures, provisions covering HIV/HBV research labs and post-exposure programs in place; HBV vaccines administered; labels and signs displayed.

For copies of the standard contact Cathy Boland at the SCMA office. Direct questions to Don Gissendanner, S.C. Dept. of Labor, OSHA Division, 734-9632. □

FINAL CLIA REGS SHOW SIGNIFICANT IMPROVEMENT

Final rules on the Clinical Laboratory Improvement Act of 1988 were published February 28. These are the federal regulations which will apply to physician office laboratories. The 1800-plus page document is getting a detailed review by AMA legal staff. Preliminary review, however, shows significant improvements in these regulations as compared to the original proposal, thanks in no small part to the more than 60,000 comments received from the federation of medicine.

Implementation of the regulations will take place over a two- to five-year period, with most physicians able to continue operating their labs, albeit with increased costs and supervision.

The AMA is working closely with various medical specialty societies to develop videos, educational materials and seminars to assist physicians in understanding and meeting the specifics of the lab rules. The SCMA newsletter will provide more details next month.

To obtain your copy of the complete set of regulations, please contact the Government Printing Office at (202) 783-3238 and request stock number 069-001-00042-4. The price for the document is \$3.50 and you may use Mastercard or Visa to make your purchase. to FAX your order, the number is (202) 512-2250. □

DHEC FREE VACCINE CANCELLED

In last month's Newsletter, it was announced that DHEC would soon make available to SC physicians free immunization vaccine for their private offices. DHEC has since informed us that this "free vaccine for all South Carolina children" program would not be initiated. The pharmaceutical firm which was to provide the vaccine has informed DHEC that it will not sell vaccine to DHEC at federal contract prices if DHEC were to initiate full public purchase of all of SC's vaccine. DHEC advises that the public purchase of vaccine for universal free distribution is cost prohibitive. DHEC will continue its existing vaccine activities, such as vaccine for EPSDT children. □

SC WORKERS' COMPENSATION COMMISSION

The SC Workers' Compensation Commission has now converted to the 1992 Evaluation/Management codes. There will be a grace period until June 1, 1992 when mandatory use of the 1992 E/M codes will be required. A mailing of the new E/M unit values will be sent to providers shortly. □

CNBC HEALTH PROGRAMMING

The AMA and NBC Cable have announced a partnership called American Medical Television which will provide major medical programming on CNBC. It premiered on February 29 with a weekly schedule of 10 hours, five hours on Saturday and five hours on Sunday. Consult your local listings. □

STOP FOR GOOD!

Smoking is the greatest cause of preventable death and disability in the United States. Physicians are in a unique position to do something about this problem. Each year 70 percent of all smokers see a physician. This is the perfect opportunity for physicians to provide information and nonconfrontational advice. It is on this premise that the AMA has developed the "STOP FOR GOOD" campaign. Instead of scare tactics, the campaign focuses on the good things that happen when patients quit smoking.

A national media campaign has been launched to educate Americans on the benefits of kicking the habit. In addition, the AMA will supply you with a variety of campaign materials including posters, brochures, patient questionnaires and videos. *To examine the program, send your name, address and phone number to: STOP FOR GOOD, c/o Feeling Fine Programs, 3575 Cahuenga Blvd. West, Suite 440, Los Angeles, CA 90068.* □

CAPSULES

Rion M. Rutledge, MD, family practitioner from Rock Hill, has been appointed by the Southern Medical Association as Associate Councilor for the State of South Carolina. □

SCMA ANNUAL MEETING DATES

1992	April 29 - May 3, 1992	The Omni Hotel, Charleston, SC
1993	April 21 - April 25, 1993	The Omni Hotel, Charleston, SC
1994	April 27 - May 1, 1994	The Omni Hotel, Charleston, SC

PHYSICIANS AGAINST FAMILY VIOLENCE COALITION

A national coalition of physicians against family violence has been established by the AMA. All physicians are invited to become members.

The coalition is a voluntary organization of physicians who are concerned about the effects of family violence and victimization, and who are committed to becoming advocates within their communities for the prevention of family violence.

Through the coalition, the physician would be informed about local contacts and referrals; become aware of local and regional resources; be provided with information regarding model education

programs; become aware of treatment guidelines and protocols; have access to newsletters, public education materials and other publications; and receive an official membership card and frameable poster alerting patients of their interest in and concern for this problem.

The only cost to the physician is his/her commitment in helping to curb this problem.

For information on joining the coalition, write to: Roger Brown, PhD, Department of Mental Health, AMA, 515 N. State Street, Chicago, IL 60610. ☐

PHYSICIAN'S SURVIVAL GUIDE:

Legal Pitfalls and Solutions

The American Medical Association and the National Health Lawyers Association have joined forces to create an authoritative broad-range survey of the complex legal issues facing today's physician. *Physician's Survival Guide* is written especially for the nonlegal professional. It examines the issues and provides practical guidance on avoiding the myriad pitfalls in the physician's legal environment, from quality of care, to referral practices, to reimbursement, etc.

Cost is \$40 per copy for AMA members, \$50 per copy for non-members. *To order immediately, call 1-800-621-8335.* ☐

AMA MEMBER SERVICE CENTER SPECIAL ORDER NUMBER

The AMA has advised that calls for the 1992 CPT code books continue to come in fast and furiously to the AMA Member Service Center.

In order to expedite orders and customer service or information requests, you or your staff should contact the AMA Member Service Center at 1-800-262-3211.

THE ORGANIC DIMENSIONS OF HEALTH POLICY

C. D. BESSINGER, JR., M. D.*

There has been steadily increasing pressure for a major reorganization and redirection of our national health system. There have been many expressions of the problems inherent in our current health policy (or as some argue, the lack of policy), and there are many proposals for needed solutions, summarized in a theme issue of a national journal.¹ However, if we are to resolve our current dilemma, our pluralistic and individualistic society will have to develop a consensus philosophy which focuses our thinking, shapes our structuring of solutions, structures our resolve, and provides appropriate ethics tests by which various proposals might be evaluated.

I have previously examined the implications for ethics of life-systems science,² drawing heavily on von Bertalanffy's work on systems theory³ and on Engel's biopsychosocial model for medical practice.⁴ It also derives from Schweitzer's concept of reverence for life,⁵ which he based on a recognition of life's autonomic "will-to-live," or, in life-systems language, *homeostasis*.⁶

That synthesis leads us to reaffirm the organic view that life is interrelated at all levels. The "health" of any level is dependent on the homeostasis of its constituent subsystems, and of the larger system of which it is itself a part. From the life-systems perspective, the ethical imperative is to bring conscious actions into accord with the principle of homeostasis, which operates autonomically at unconscious levels of life.

I propose that life-systems analysis can also make a significant contribution in helping

reshape national health policy. The long-range success of any changes will require an awareness of the principle of homeostasis. Such an idea is not merely metaphor, for the health industry as a system cannot be divorced from the multi-level life system which it seeks to serve, and of which it is a part.

ORGANIC PRINCIPLES

Though we well recognize organic principles as the physiological basis of clinical practice, we are generally less practiced at seeing such principles in action at the social level. Yet, systems theory recognizes the multi-dimensional interactions between all levels of life. Survival requires feedback and freedom of response to challenges. Regardless of level, there are certain needs which must be met, requiring both the avoidance of harm and the ability to heal injuries when they occur. At the large-system level, maintaining the integrity of its constituent subsystems and providing diversity of responses (through complex subsystems organization) are integral to that healing and survival.

The life system also recognizes individual limits. Further, biological variation imposes a probabilistic "uncertainty principle" which limits the ability to predict outcomes of conscious actions. All of these considerations must govern decision-making, but are not necessarily addressed in more traditional systems of ethics.

PLANNING AN ORGANIC HEALTH SYSTEM

The health system is a multi-level sector of the life system whose survival requires meeting the needs of its society and of the

*10 Enterprise Boulevard, Suite 107, Greenville, SC 29615.

individuals it is supposed to serve. However, the complexities of the system require that many competing interests be reconciled. The life system (and its health subsystem) must provide for and integrate the whole. That does not necessarily arise from altruism (though that is one dimension at the conscious level of reverence for life), but from its neutral seeking of homeostasis.

Foremost among its needs is access by all who need the system's services, in order to avoid the harms (now readily apparent) for individuals, society, and the health professions when pain and disease are not properly addressed. Among current problems which must be removed or minimized is the mindset of patient as an adversary who must be defended against by practicing a medicine of excess. It must also minimize polarizations by class and category, which harm patients and contribute to various social stresses and instabilities.

Efficiency requires providing incentives and rewards (financial, yes, but also personal and professional satisfaction) for hard work, irregular hours, and diligent study which are basic elements in medical professionalism. The system must also be free to respond; it must provide for freedom in professional decision making, so as to minimize interference with the doctor-patient relationship. While limits and tolerances must be set at the system level, external management of decision-making at the patient level sets barriers to meeting human needs.

The system must be diverse in both the scientific and economic aspects of its health care program, to foster "learning" and adaptation to changes and challenges. The existing variety of delivery mechanisms is a strength which provides opportunities to explore new options as local and regional conditions change. Models which have proven satisfactory in small homogenous populations will not likely be as satisfactory in a large heterogeneous nation. The larger

system requires additional subsystems organization, with mechanisms to reduce the possibility of injury and chaotic response if a portion of the industry were to fail.

The feedback principle indicates the importance of the public role in monitoring and setting the "physiological" limits of tolerance of the system, and responding immediately and decisively to avert subsystem failure. Monitoring must include all component subsystems (insurance funds, and individual and institutional providers), and promptly identify areas of inefficiency and impropriety. Recent national experience indicates that there must be structural protections from the type of corporate looting which recently characterized the federally insured — and too-lightly regulated — savings and loan industry, and the securities markets.

The feedback principle also suggests that the system should permit funds and data to flow readily between subsystems (insurers) throughout the nation in response to normal regional peaks, such as seasonal cycles of disease or regional economic cycles. This free-flow could be achieved by a system of inter-insurance. Each insuring fund would function in part as a re-insurer for all others against short-term losses. That is, the reserve fund "pool" would be dispersed throughout the system. Government funds would be used primarily to purchase basic benefits insurance on behalf of its entitlement program clients, but would also provide re-insurance of the inter-company "pool."

The element most conspicuously missing in the present system is a "neuroendocrine axis" for the necessary central integration of the many subsystems. That could be provided by a non-political quasi-governmental agency ("Commission") which maintained on-line monitoring of flow of funds and services within the system, and which used various software pattern recognition techniques to identify strain-points. The commission could respond by coordinating inter-insurance funds

transfers, and it would have appropriate investigatory and disciplinary powers, under careful public review. However, success of the system would depend in large measure on avoiding adversarial relationships.

NATIONAL HEALTH BENEFITS

It is not realistic to expect a national health system to lower health care costs, if access is extended to one-hundred percent of a growing population. However, in the long-term view, an equitable health system is necessary for the stability and survival of the social system at large. The system must somehow accommodate whatever an equitable system costs.

The present difficulty is not those *essential* costs, but *excess* cost. Planning must emphasize meeting appropriate cost, and avoidance of excesses. The current unbridled medical liability system is a major contributor to excess costs, of proportions sufficient to prevent a national health insurance system from reaching homeostasis. Success of a national health program will require achieving a fair and appropriate no-fault liability system.⁷

Universal access to care is unquestionably an expensive concept, and it brings us directly into confrontation with limited resources, for appropriate health care is only one essential of a homeostatic society. Here too, life-systems analysis helps by distinguishing differing requirements at the several levels of action.

Individuals define quality of life differently among themselves, and differently from social goals. Life-systems analysis (LSA) helps distinguish wants and needs. It is appropriate for individuals to satisfy wants to the extent that it can be done without harming other persons or other levels of the life system. LSA also helps recognize that, to a large extent, the widely varying hazards (and costs) of disease are imposed on individuals by chance, even though some choices do influence individual risks of disease. System stability is better achieved by sharing the

financial risks universally, rather than in small isolated groups. Further, LSA points to the inevitable limits of individual life, and helps decide the limits of attempts at ineffective interventions.

Society's needs are just as real, but are different. A homeostatic society must reproduce itself and maintain appropriate population levels. Family health for the nurturing of children's health is also a social need, as is the maintaining of the economic and intellectual productive strengths of its members. Society needs to maintain cohesion and avoid the stresses and instabilities inherent in conditions which are perceived to be unjust. These needs are met largely, though not exclusively, through the health care system.

I suggest that this analysis leads us to reconsider⁸ a two-tiered health insurance system: A universal coverage level directed toward meeting basic social needs, and an optional coverage level directed toward meeting individual life goals which may exceed social needs.

Universal Benefits System (UBS)

A UBS program would provide that level of care which is essential for benefit at the social level of the life-system: namely, the general well-being of all of its citizens for social stability and productivity. UBS would include therapies of proven benefit for relief of suffering and for preventive and curative care for all people. These standard benefits would be required to be provided by all companies selling health care insurance, and accepted by all providers of care. Premiums would be paid by whatever mix of employer, personal, and government contributions is required to provide universal coverage. Coverage would be keyed to a no-fault liability system. For UBS-covered services, providers would accept UBS scale benefits as payment in full. Within the UBS program, there would be no benefit distinctions as to age, employment status, income level, or any other consideration.

Optional Individual Benefits (OIB)

The OIB program would provide for that care which may benefit individuals, but which does not as directly provide general benefit to society, and which society cannot afford to cost-share if it is to meet its social needs. For example, UBS might exclude any procedure with a less than 50 percent benefit rate. It might exclude transplantation (perhaps beyond a certain age-limit), extended dialysis, and aggressive therapies of incurable diseases. So long as society can maintain a sustainable reproductive level without them, fertility procedures would be excluded. The OIB program would pay for services not covered by UBS. Payment would be an allowance toward a monitored reasonable fee. Providers could bill for balance due.

Admittedly this leaves a difficult "fuzzy zone" between the two coverages. This category includes procedures with a relatively low success rate and procedures of uncertain benefit. Also difficult to decide would be the extent of care for incurable disease and the extent of rehabilitation measures, when only limited benefit is possible. Initially, these areas would be considered OIB coverage, but as experience and resources warranted, and as benefits of new procedures are proved, some care could be reassigned to UBS coverage. It would be desirable to make a funding and programmatic distinction between normal health care and "attended domiciliary care" for incapacitated persons who do not stand to benefit further from specific health care measures.

Such issues would not be decided individually, however. They would be decided in advance at the national level, by expert commissions appointed for the purpose. The recently-funded Oregon Plan⁹ makes such distinctions by prioritizing treatments, then resets limits (for Medicaid coverage) each year on the basis of available funds. The UBS plan would set limits for all patients, using an objective biological standard: the proven benefits of a therapy to

individuals with a given diagnosis.

The UBS program must emphasize benefit to individuals, for a system (society) which does not respect its subsystems (individuals) tends toward destabilization. Society derives its benefit through the ready availability to its members of effective health care measures. Yet the program must consider available resources and always seek an equilibrium point between individual and societal needs.

The UBS program does not promise reduction of total health care costs. However, the program would have a helpful effect on costs, by insuring the availability of preventive care, removing incentives for defensive care, promoting proven treatments over those which are merely new, and by offering administrative efficiency. It would require regular funding adjustments to meet its standard of care, for the nation is growing and its lifestyles and distribution of diseases are constantly changing. After all, disease is a life-system concept, too.

It would be essential for public compliance to have full and open discussion and education within society of the philosophical basis for such decisions. Decisions must be based strictly on the objective biological standards, within available resources.

QUESTIONS OF JUSTICE

Such decisions inevitably raise concerns about the morality of rationing. Here again, life-systems analysis helps. This proposed system is fair to the same extent that the biological system is fair: Life is fair only in that we are all at risk for disease and death. It is not physicians or other decision-makers in society who choose who lives and who dies. Disease chooses its patients by some inscrutable means, seemingly randomly, without respect to sociological categories. (Even those whose behavior puts them in harm's way are not universally "chosen for disease.")

The present system "selects" who may be treated by arbitrary sociological categories.

The proposed UBS program leaves choice to a "natural selection" process. It uses biological criteria, not social status, as the determining element in access to care. Further, *rational* choices (in two possible senses of the word) are made in advance according to organic considerations of the needs of the whole. The system is designed to reach out to, and respect, all persons. It does not penalize those who wish to provide individually for care beyond the socially-recognized essential level. That is as fair as a living system can be.

COMMENT

The success of our "American experiment" lies in our national constitution's accord with the principle of respect for human persons whose political rights are derived "naturally," and whose governance must incorporate the organic principle of checks and balances. In that sense, life-systems analysis set the foundations of the nation. It has application as well to our search for an equitable system of health care.

Currently there are many proposals on the table for health system restructuring. Inevitably there is overlap of features among them, and with those mentioned here as well. This analysis suggests the strengths of diversity, resiliency and stability which could come from reorganizing the components of the existing system into a homeostatic whole. However, we are unlikely to satisfactorily specify the details of that reorganization until we come to a philosophic consensus which recognizes both individual and social dimensions of existence, in accord with life-systems realities.

No program will long succeed unless it achieves that equilibrium which we know in physiology as homeostasis. If we truly

respect life, the principle which guides us in writing prescriptions for our patients will guide us in writing social policy as well.

SUMMARY

The health care system is a level of the larger social system, within which it must seek and find its equilibrium. This organic concept leads to a more realistic assessment of needs and goals, and can make a significant contribution in helping reshape national health policy. It also suggests a re-examination of a two-tiered approach to health benefits: a universally available level of care deemed essential for meeting social needs, and an optional coverage level directed toward meeting those individual life goals which may exceed social needs. □

REFERENCES

1. Caring for the uninsured and underinsured. (Theme issue, seventeen papers). J Amer Med Assoc. 1991; 265: 2491-2567.
2. Bessinger CD Jr. Living ethics: Homeostasis and ethical principle. J SC Med Assoc, 1990; 86: 631-635.
3. von Bertalanffy L. General system theory: Foundations, development, applications. New York: Braziler, 1968.
4. Engel GL. The need for a new medical model: A challenge for biomedicine. Science, 1977; 196:129-136.
5. Schweitzer A. philosophy of civilization (1923). Reprint, Tallahassee: University Presses of Florida, 1981.
6. Bessinger CD Jr. Doctoring: The philosophic milieu. Southern Med J. 1988; 81: 1158-1162.
7. Manuel BM. Professional liability—A no-fault solution. New Eng J Med, 1990; 322: 627-631.
8. Korcok M. Can two-tiered health care work? Can Med Assoc J, 1983; 129: 629-635.
9. Hadorn DC. Setting health care priorities in Oregon: Cost-effectiveness meets the rule of rescue. J Amer Med Assoc 1991; 265: 2218-2225.

THE UNITED STATES ARMY RESERVE HEALTH CARE PROFESSIONALS BONUS TEST PROGRAM \$10,000 - \$20,000 - \$30,000

The **1989 National Defense Authorization Act** required that the Department of Defense conduct a test to determine the effectiveness of a recruitment bonus to attract health care professionals to the Selective Reserve of the Army. The 1991 National Defense Authorization Act directed that the test continue.

The Bonus Test Program is offered to physicians in the following specialties:

**ANESTHESIOLOGY
ORTHOPAEDIC SURGERY
and
GENERAL SURGERY**
(Including selected subspecialties)

Applicants must be board certified or meet all requirements for board candidacy in one of the above specialties.

BONUS ELIGIBILITY: In addition to meeting all criteria for appointment as a medical corps officer in the US Army Reserve, Bonus Test applicants must be civilians and if prior service, discharged before 28 April 1989.

BONUS AMOUNTS: The test offers \$10,000 bonus for each year of affiliation with the Selected Reserve of the Army, up to a maximum of 3 years. Physicians must choose 1, 2, or 3 years of affiliation at time of application. Bonuses will be paid annually at the beginning of each year of agreed affiliation.

TEST PARAMETERS: The design of the test stipulates that bonuses be offered in certain geographic areas. To qualify, applicants must reside within those areas at the time of accession.

**TO FULLY DETERMINE YOUR ELIGIBILITY FOR THIS PROGRAM
PLEASE CONTACT:**

U.S. ARMY RESERVE HEALTH CARE TEAM
Strom Thurmond Fed. Bldg., 1835 Assembly St., Rm 575, Columbia, SC 29201
OR CALL COLLECT: (803) 765-5696

Editorials

DEATH FOR BEGINNERS

Guest editorials reflect the opinions of the authors and are not necessarily the opinions of the Editorial Board and the SCMA Board of Trustees.

An editor up north recently asked me to do an article for his magazine on euthanasia. This was for the general public so I decided to give some of my opinions and mix in the review of three recent books on the subject: *Prescription Medicine: The Goodness of Planned Death* (Prometheus Books), *Planned Death* by Dr. Jack Kevorkian, *Regulating Death: Euthanasia and the Case of the Netherlands* (Maxwell McMillan), by Carlos F. Gomes, M.D., and *Final Exit: The Practicalities of Self-Deliverance and Assisted Suicide for the Dying* (Hemlock Society), by Derek Humphrey. In writing this for the public I was constantly going over and changing for the benefit of the general reader - it's somewhat a relief to do this again for my fellow physicians.

Jack Kevorkian, M.D., is a strange man who has written a strange book. In starting to read this book I anticipated a plug for euthanasia and his "suicide machine" which has gotten so much publicity of late. Surprise — this wasn't mentioned until the last several pages.

The biggest part of this book is a chronicle of 33 years of his efforts to talk condemned prisoners into permitting human vivisection to be performed on them as they died. He spent much of his time during these years visiting condemned prisoners, wardens, physicians and politicians pushing for human vivisection. His idea was to place the person undergoing capital punishment under an anesthetic - perform various "experiments" on which he didn't elaborate, then remove their organs for transplantation and let them

die. These efforts have centered on a total of 120 executed criminals, which seems extreme when you realize that 18,060 organs were donated in the United States between 1988 and 1989 through the United Network of Organ Sharing. With our present ability to share organs and extend lives, it seems a waste to spend the long time Kevorkian did on those few undergoing capital punishment. Of course, this isn't the only reason to look askance at such doings. He says that the medical profession is against his ideas for they don't want to be known as "killers" — well.

One of Dr. Kevorkian's reasons for justifying the use of the condemned is his opinion of the many ways capital punishment has been botched and caused severe pain to the executed. He naturally concluded that it would be more humane to put them to sleep, experiment, then take their organs.

His brief history of capital punishment is rather thorough and somewhat macabre. There were many pages of experiments done on the heads of beheaded prisoners in Europe.

When Kevorkian failed in all of his efforts in this country on human vivisection, he took his plans to the Netherlands where there is a reputation for euthanasia. The Dutch gave his plans for human vivisection very little attention. It was then, circa 1989, that he returned to this country and started in on euthanasia with his suicide machine. He hasn't since that time been pushing for human vivisection — not yet.

Dr. Carlos Gomez is a physician in resident training at the University of Virginia. He

spent several months in the Netherlands studying their approach to euthanasia, and in his opinion finds it all bad. But then he's been opposed to euthanasia from the beginning. He accused the Dutch of "making the facts fit an argument" and concluding, "the situation in the Netherlands is not so benign — and certainly not so well regulated — as its defenders have suggested."

Actually euthanasia is illegal in the Netherlands but it is in fact rather commonly done. There are some estimates that as many as 20,000 people a year die of euthanasia which is around 16 percent of the mortality — yet the Ministry of Justice only admits to about 200 which is all that is reported.

The law in the Netherlands is based on Roman, not Anglo-Saxon, tradition. The judiciary acts without a jury and the district prosecutor decides whether or not a case should be tried. If certain guidelines are followed — voluntariness on the part of the patient, a well-considered request, stability of desire, unacceptable suffering, and consultation of colleagues — then the act of euthanasia is usually not prosecuted. The act must also be reported to the district prosecutor and be done only by a physician.

In his interviews, Gomez finds that the criteria for euthanasia are often disregarded and the prosecutor seldom notified. The Dutch physicians say they usually don't report euthanasia to the prosecutor because they don't want the family to have to go through a routine investigation. This approach seems to satisfy most of the prosecutors as well. The death certificates most often have a diagnosis of "respiratory failure" and rarely, if ever, mention euthanasia. Many of the Dutch are treated at home in their final illnesses. There are 10,000 general practitioners in the Netherlands and it's these physicians who are responsible for much of the euthanasia.

The little book, *Final Exit*, is outselling all the rest. Physicians that practice with patients who die need to read this book. Part of it is telling the patient how to handle their doctor, so you need to know what it says.

A longtime patient came in the clinic the other day and asked me, "Have you read *Final Exit*?" She is alone and has suffered considerably from a severely crippling disease. I read the book that night and noticed immediately that she was following Humphrey's advice — and apparently stockpiling a fatal dose of medication. So I promptly went around to her house, and we had a long talk; I put her on an antidepressant. She gave me a wan 78-year-old smile and said, "I'll go through all this with you, but you won't change my mind."

I may not change her mind, but then again I might. I well remember a 40-year-old severely depressed woman who took two handfuls of mercuric-chloride tablets in a suicide attempt. That's a bad way to go. She lingered for days with destroyed abdominal organs. Before she died she changed her mind and I'll never forget her pleas and those of her children at the bedside, "Oh, Doctor, please save Mama!"

I'm glad voters in the state of Washington recently voted against the legalization of euthanasia. It's the institutionalization of euthanasia that is frightening. Make euthanasia a legal possibility and then it will become a bureaucratic operation. I don't want some pathologist or resident physician making a decision on whether I live or die. I want my experienced family doctor with me and I want to be home, not in some institution with lawyers looking over his shoulder.

William H. Hunter, M.D.
One Hunter Court
Clemson, SC 29631

APPROPRIATE HEALTH POLICY: A LARGER VIEW

Frequently consider the connection of all things in the universe and their relation to one another.

— Marcus Aurelius

As Allan Bloom has pointed out, American society rewards performers, not thinkers.¹ We fuss over movie stars, concert pianists, and quarterbacks, but pay little heed to the lonely intellectuals who think seriously about the issues-of-the-day in their larger contexts. The current debate over healthcare policy provides yet another example: a shouting match mainly between performers, not thinkers.

This is a shame especially because we have so many fine thinkers in our society, and especially within the medical profession. In South Carolina, we are especially fortunate to have Dr. C. D. Bessinger of Greenville, who is especially interested in systems theory and not at all afraid of addressing the Big Questions, as in his first book, *Religion Confronting Science*.² In this issue of *The Journal*, Don Bessinger raises the possibility that systems theory may indeed be applicable to the problem of appropriate, cost-effective healthcare delivery.

His basic message comes as a breath of fresh air especially during this election year when so many alternative solutions are being put forth in the public arena. Dr. Bessinger builds his recommendation on his earlier work, in which he interpreted Albert Schweitzer's concept of "reverence for life" within the framework of what we now know about homeostatic ecosystems. Dr. Bessinger's proposal for health care would require the physician to examine not only the needs of the patient before him but also the needs of society. We can no longer afford to expend our resources, unmonitored, for marginal patient benefit. There must be ongoing evaluation of "all component subsystems."

Is such thinking naive and utopian? I think not. However, the concept will not work without a mandate from society as stipulated by government. As physicians, we must participate in the debate but must recognize that we are but one of many voices. Perhaps our most important input should be the definition of "appropriate care." We can and must inform the public about what really works, what is cost effective, what adds not merely to the length of life but also to the quality of life. We can and must inform the public about what aspects of our technology should be made available to everyone. We can and must inform the public of what aspects of our technology should be considered "luxury" as opposed to basic need. Data of the kind already generated by hospitals could be used to monitor such a system as proposed by Dr. Bessinger. Already, a new computer methodology known as "neural networks" is being used to provide feedback to physicians.³ Cannot this methodology be applied to the system as a whole? In theory - yes!

Some may consider Dr. Bessinger's plea for re-thinking the two-tiered health system to be discriminatory. However, as Dr. Arnold Relman has opined: "We cannot afford all the care a market-driven system is capable of giving."⁴ Dr. Relman does say, however, that "we can afford all the care that is medically appropriate according to the best professional standards."

Our task is to define what in fact represents "the best professional standards." We must be careful not to impose our version of the Golden Rule on others, for each person is entitled to decide how he or she would like to be treated. But we can educate the public,

participate in the debate, and help government define more clearly what represents "appropriate care." No group of persons is better able to do so than physicians—and perhaps especially primary care physicians.

If we are to be a part of the solution, we must participate in the dialogue. Dr. Bessinger, with his global way of looking at things, has again suggested a conceptual framework. Can we make it work?

—CSB

LIPOPROTEIN(a)

The first issue of what is now *The New England Journal of Medicine* (January 1812) began with Dr. John Warren's "Remarks on Angina Pectoris" in which he reported four cases that "have fallen under my observation, one only of which has afforded opportunity for dissection." Dr. Warren concluded his paper with speculations concerning etiology:

Whether there is *any* particular state of *any one* of these organs . . . we shall not presume to decide.

Possibly some *combinations*, or, perhaps, some single circumstance of derangement, may . . . suddenly induce the symptoms . . . but we do not, at present, seem to possess a sufficient number of facts to pronounce any degree of certainty on this subject.

In the mean time, as we naturally wish to simplify in our investigation of causes, and philosophy teaches us to do so, we should be induced to extend our inquiries with this view; but it should be remembered, that, in the results, we are sometimes apt to simplify too much.¹

As this issue goes to press (January 1982), the most recently-arrived issue of *The New England Journal of Medicine* contains a detailed explanation of our current under-

REFERENCES

1. Bloom A: The closing of the American mind (New York: Simon and Schuster, 1987).
2. Bessinger D: Religion confronting science (Greenville, S.C.: Orchard Park Press, 1991).
3. Guerriere MRJ, Detsky AS: Neural networks: what are they? *Ann Intern Med* 115: 906-907, 1991.
4. Relman AS: The health care industry: where is it taking us? *N Engl J Med* 325: 854-859, 1991.

standing of the pathogenesis of coronary artery disease.² Today's "response to injury" hypothesis posits that symptomatic coronary plaques result from recurrent thrombosis superimposed on earlier (if ongoing) atherosclerosis. Hence, there are two sets of risk factors: atherogenic risk factors and thrombogenic risk factors. Simplistically, this perhaps translates to "take aspirin every day and know thy cholesterol." But which cholesterol? For some time, we have known that we must know not only the total serum cholesterol, but also the proportions of low density (LDL), very low density (VLDL), and high density (HDL) cholesterol, and that HDL is actually "good" possibly by promoting "reverse cholesterol transport" from arterial wall to bloodstream. In this issue of *The Journal*, Dr. Karl Doetsch, an MUSC alumnus, informs us that it's also important to "know thy lipoprotein(a) level." What gives? A growing body of evidence supports this recommendation. High lipoprotein(a) levels seem to be an important risk factor for coronary artery disease. As summarized in a recent review:

In the past few years, lipoprotein(a) [Lp(a)] has been shown to account for a very large percentage of the remaining, previously unrecognized risk for athero-

sclerosis and myocardial infarction. Since the initial discovery and risk assessment of Lp(a)..., it has been amply demonstrated that persons in the top quartile of plasma Lp(a) levels have a two- to fivefold increased risk of heart disease and that an elevated Lp(a) level represents the most prevalent inherited risk factor for atherosclerosis.³

At least in theory, lipoprotein(a) is uniquely dangerous in that it contributes to both atherogenesis (lipid deposition) and thrombogenesis (ongoing thrombosis, plaque disruption, and occlusive thrombi).

Lipoprotein(a) is deposited intact in atherogenic lesions, and its deposition seems to correlate closely with plasma levels. It is speculated that lipoprotein(a) promotes thrombogenesis by interfering with the fibrinolytic process—which requires conversion of plasminogen to plasmin in order to cleave fibrin and thereby dissolve blood clots. Lipoprotein(a) has a striking resemblance to portions of the plasminogen molecule, and might therefore disrupt the fibrinolytic system by competing with plasminogen for tissue plasminogen activator. But we digress. What should we do for our patients? Dr. Doetsch may well be correct that routine lipid profiling during the 1990s should include lipoprotein(a) levels. At present, however, there are two important reservations. First, simple, accurate, well-standardized techniques for measuring lipoprotein(a) levels are not available. Second, lipoprotein(a)

levels seem to be insensitive to our standard dietary and drug regimens (the only drug shown thus far to lower levels is niacin given in almost-prohibitively high doses).

Until lipoprotein(a) measurement has shown to be cost effective, then, a conservative approach would be to continue to emphasize measurement of total cholesterol, LDL, and HDL and to urge smoking cessation, proper diet, and exercise. Fortunately, it seems that the atherogenic and thrombogenic activities of lipoprotein(a) may depend, at least in part, on better-known risk factors such as smoking, hypertension, diabetes mellitus, and obesity.³

Since Dr. Warren's four case reports 180 years ago, coronary atherosclerosis has come to be recognized as Public Enemy Number One. Lipoprotein(a) may be a promising new direction for risk assessment, prevention, and therapy. But we should also remember Dr. Warren's final words of warning: "we are sometimes apt to simplify too much."

— CSB

REFERENCES

1. Warren J: Remarks on angina pectoris. *N Engl J Med Surg* 1: 1-11, 1812.
2. Fuster V, Badimon L, Badimon J, Chesebro JH: The pathogenesis of coronary artery disease and the acute coronary syndromes. *N Engl J Med* 326: 310-318, 1992.
3. Scanu AM, Lawn RM, Berg K: Lipoprotein(a) and atherosclerosis. *Ann Intern Med* 115: 209-218, 1991.

On the Cover:

SIR WILLIAM OSLER, 1849-1919

On Thursday, April 23, 1992, the Waring Library Society will hold its 14th Annual Meeting. The speaker for this occasion will be Faith Wallis, Ph.D., Osler Librarian, Osler Library of the History of Medicine, McGill University. Dr. Wallis will discuss how Osler's ideas, ideals and personality are reflected in the books he selected for his library. The public is invited.

Sir William Osler, M.D. was the most prestigious practitioner of medicine that the modern world has produced. He was Professor of Medicine at McGill, the University of Pennsylvania, and Johns Hopkins University Medical School which he helped found, and finally, he was Regius Professor of Medicine at Oxford University.

Osler was not a famous man in "scientific" medicine; his discoveries are few. As a clinician and as a teacher, however, he was probably unexcelled. Osler loved people, especially children, old people and medical students. As a result, children, old people, students, physicians and patients loved him. Three of his primary personal ideals were: "One, to do the day's work well and not to bother about tomorrow. The second has been to act the Golden Rule, as far as in me lay, towards my professional brethren and towards the patients committed to my care. And the third has been to cultivate such a measure of equanimity as would enable me to



FIGURE. OSLER AND CHILD

bear success with humility, the affection of my friends without pride, and to be ready when the day of sorrow and grief came to meet it with courage befitting a man."

This year marks the 100th anniversary of the publication of Osler's *Principles and Practice of Medicine* which became the bible of the practitioner and student of his day. Sixteen editions, 84 reprintings, and 300,000 copies sold give evidence of Osler's influence on his own and succeeding generations of doctors.

One of Osler's most important contributions to medical education was his strong reliance on bed-side teaching. He once declared that he would like his epitaph to read: "Here lies the man who admitted students to the ward."

Betty Newsom
The Waring Historical Library



President's Page

TAKE THE HIGH ROAD . . .

During the past year I've used this page to address some important issues facing us as individual physicians and as a profession. Our role as "good physicians" has been my yardstick to measure our approach or response to various issues. I have provided few, if any, answers to the difficult problems confronting us. My hope is that you've been as challenged by reading this page as I've been by writing it.

Last summer one of my colleagues mentioned that he had been reading the President's Pages and that I was doing "okay," but that he didn't always agree with me. Then I was insecure enough to be discouraged. Now I realize that I had accomplished one main goal by having him read the page and form an opinion, even if that opinion was different from mine.

Recently Suzanne Hellams, the SCMA Director of Communications, called me before I gave a television interview to be certain that I had all the background information I needed. She also left me with some simple advice, "Take the high road." Although she had been on the job less than two years, Suzanne knew the position that we physicians must take on issues. We should take the high road! We should stress truth, fairness and our patients' welfare. Granted, we must speak up for physicians and our profession, but we should avoid being self-serving. We physicians are few in number; everyone else is a potential patient wanting and needing our services. We need those patients as our allies. Whether the issue is RBRVS, HIV-testing for healthcare workers, or healthcare reform, we should try to build a coalition with the public, our patients. But first we should work out the differences among ourselves and present a united position for the profession, a position based on high standards and principles.

The SCMA Annual Meeting will be held in Charleston April 29 - May 3. The House of Delegates meeting is an opportunity for you to participate in making the policies which will guide the activities of the Board of Trustees for the next year. Some of you have voiced displeasure at decisions made by the board this year. I encourage you to come to the meeting as a delegate, voice your concerns, and be a part of the decision-making process.

Thank you for the honor and privilege of being your president. I suspect I am not the only president who has felt inadequate at various times during the year. I appreciate the exceptional support which I have received from the Board of Trustees and the SCMA staff. The board is composed of hard-working physicians who are committed to improving medicine in South Carolina for both physicians and patients. Bill Mahon, our executive vice president, has assembled an excellent staff. They have always been ready, willing and able to help me in any way. Last but not least, thanks to my wife Fran, who has assumed the role of kitchen-table Copy Editor for these pages.

As we look to the future, medicine will continue to face many challenges. The challenge to you, and to me, is that we strive to be good physicians, that we maintain the highest professional and ethical standards, that we take the high road.

J. Chris Hawk, III, MD
President

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EDITOR

Charles S. Bryan, M.D.
SCMA, P.O. Box 11188
Columbia, S.C. 29211

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THE ONE HUNDRED FORTY-FOURTH ANNUAL MEETING

**THE OMNI HOTEL, CHARLESTON, SOUTH CAROLINA
APRIL 29 - MAY 3, 1992**

The 144th Annual Meeting of the South Carolina Medical Association will mark 12 consecutive years in Charleston and the sixth consecutive year at the Omni Hotel.

Information regarding the meeting, including registration form and hotel reservation form, has been mailed to all South Carolina physicians, but if you have not received this information, call SCMA Headquarters in Columbia (798-6207 or 1-800-327-1021). Again, there is no registration fee for SCMA members, and pre-registration is encouraged.

The House of Delegates meets to consider the business of the association on Thursday morning, April 30, and again on Sunday morning, May 3. Reference Committees will meet on Thursday afternoon.

A total of 18.5 AMA Category I and 19.5 AAFP Prescribed hours have been approved for scientific sessions beginning on Wednesday afternoon and continuing through Saturday afternoon. Of particular interest are the four SCMA Plenary Sessions with the theme of "New Technologies: New Choices." Consult the schedule of events which follows

for details on all programs.

Special guests for this annual meeting include Joseph T. Painter, M. D., Chairman of the Board of Trustees of the American Medical Association.

Again this year, the SCMA will serve as the umbrella organization for many specialty societies who will hold business and scientific sessions during the annual meetings.

The SCMA Board of Trustees will meet on Wednesday, April 29 and at breakfast each day to consider business which arises during the House of Delegates meeting.

This issue of *The Journal* contains reports and resolutions available at publication deadline. Additional reports and resolutions received after this issue has gone to press will be included in the delegates' handbooks which will be mailed prior to the meeting. Delegates are asked to bring their handbooks to the meeting or to pass them along to alternate delegates if they are unable to attend.

— JD

**ONE HUNDRED FORTY-FOURTH ANNUAL MEETING
SCHEDULE OF EVENTS
Wednesday, April 29, 1992**

TIME/LOCATION	EVENT
11:30 a.m.-7:00 p.m. 2nd Floor Grand Hall	SCMA Registration—Open
12:15 p.m.-1:30 p.m. Louis's Charleston Grill	SCMA Board of Trustees Luncheon
3:00 p.m.-7:00 p.m. Dogwood/Cypress/Live Oak Ballrooms and Grand Hall	Exhibitors Setup
1:30 p.m.-5:00 p.m. Jenkins/King Room	SCMA Board of Trustees Meeting
2:00 p.m.-5:00 p.m. Willow Ballroom	Risk Management Program for New Physicians: "Risk Management in the '90s: Helping Each Other in a Risky Business" John R. Hunt, MD, Anderson Ronald Colvin, JD, Spartanburg Ms. Karen Reeves and Mr. Karl Pfaehler, SC Hospital Association
5:00 p.m.-6:30 p.m. Willow Ballroom	New Physicians: Risk Management Wine & Cheese

Thursday, April 30, 1992

7:00 a.m.-5:00 p.m. 2nd Floor Grand Hall	SCMA Registration—Open
7:00 a.m.-8:00 a.m. Louis's Charleston Grill	SCMA Board of Trustees Breakfast
7:00 a.m.-8:00 a.m. Hampton Room	SCMA Past Presidents' Breakfast
7:00 a.m.-8:00 a.m. Edmunds Room	Specialty Society Delegates Meeting
7:00 a.m.-8:00 a.m. Fenwick Room	Residents Breakfast Meeting (Compliments of the AMA Resident Physicians Section)
7:30 a.m.-8:30 a.m. Booths 22 & 65	Coffee

SCHEDULE OF EVENTS

Thursday, April 30, 1992 (continued)

TIME/LOCATION	EVENT
7:30 a.m.-6:00 p.m. Dogwood/Cypress/Live Oak Ballrooms and Grand Hall	Exhibits Open
8:00 a.m.-11:30 a.m. Willow/Magnolia Ballrooms	SCMA House of Delegates
9:45 a.m.-10:45 a.m. Booths 22 & 65	Coffee
10:00 a.m.-11:00 a.m. Riley Room	MUSC Medical Alumni Board Meeting
12:00 noon-2:00 p.m. Drayton Room	SCMA Young Physicians' Section Luncheon & Meeting
12:30 p.m.-1:30 p.m. Edmunds Room	Reference Committee Chairmen's Luncheon
12:45 p.m.-1:45 p.m. Magnolia Ballroom	MUSC Alumni Luncheon
12:30 p.m.-2:00 p.m. Wickliffe House	Auxiliary Past Presidents' Luncheon
1:30 p.m.-3:00 p.m. Colleton, Fenwick, Gadsden and Beaufort Rooms	SCMA Reference Committee Meetings (Specific room assignments will appear in Delegates Handbook)
2:00 p.m.-5:00 p.m. 2nd Floor Lobby	Auxiliary Registration—Open
2:00 p.m.-3:00 p.m. Booths 22 & 65	Coffee Break

2:00 p.m.-4:00 p.m.
Willow Ballroom

SCMA Plenary Session:
"An Historical Perspective of the Medical University of
South Carolina in Medical Education"
MUSC Alumni Association Centennial Speaker:
W. Curtis Worthington, Jr., MD,
Panel Discussion: "Medical Education in the 21st
Century: Meeting the Needs of the Citizens of South
Carolina"

SCHEDULE OF EVENTS
Thursday, April 30, 1992 (continued)

TIME/LOCATION	EVENT
3:00 p.m.-5:00 p.m. Beauregard, Fenwick, and Gadsden Rooms	SCMA Reference Committee Meetings (Specific room assignments will appear in Delegates Handbook)
4:00 p.m.-6:00 p.m. Dogwood/Cypress, Live Oak Ballrooms and Grand Hall	SCMA Reception Honoring Delegates, Alternates Speakers and Exhibitors (All Registrants Welcome)
5:00 p.m.-7:00 p.m. Jenkins/King Room	USC School of Medicine Alumni and Faculty Reception

Friday, May 1, 1992

7:00 a.m.-12:00 noon 2nd Floor Lobby	Auxiliary Registration—Open
7:00 a.m.-5:00 p.m. 2nd Floor Grand Hall	SCMA Registration—Open
7:30 a.m.-8:30 a.m. Louis's Charleston Grill	SCMA Board of Trustees Breakfast
7:30 a.m.-9:00 a.m. Fenwick Room	Editorial Board Breakfast
7:45 a.m.-8:45 a.m. Booths 22 & 65	Coffee
8:00 a.m.-9:00 a.m. Drayton Room	Auxiliary Executive Board Meeting

8:00 a.m.-10:00 a.m. Jenkins/King Room	Risk Management Program (Continental Breakfast) "Managing Risk When Prescribing Drug Therapy" Walter L. Fitzgerald, MS, JD, University of Tennessee, Memphis, TN
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8:00 a.m.-5:00 p.m. Dogwood/Cypress/Live Oak Ballrooms and Grand Hall	Exhibits Open
8:30 a.m.-11:00 a.m. Colleton Room	Sports Medicine Committee Breakfast Meeting

9:00 a.m.-11:30 a.m. Willow Ballroom	SCMA Plenary Session: "Assisted Reproductive Technologies: State of the Art in South Carolina"
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SCHEDULE OF EVENTS

Friday, May 1, 1992 (continued)

TIME/LOCATION	EVENT
9:00-11:30 a.m. Willow Ballroom (continued)	<p>"Overview" G. William Bates, MD, Greenville Hospital System</p> <p>"Stimulated Intrauterine Insemination" Elizabeth L. Baker, MD, Lexington</p> <p>"Gamete Intra Fallopian Tube Transfer (GIFT)" Gary L. Holtz, MD, Columbia</p> <p>"In Vitro Fertilization" William Butler, MD, MUSC</p> <p>"Gamete Preservation" Thomas Price, MD, Greenville</p>
9:30 a.m.-12:30 p.m. Magnolia Ballroom	Auxiliary House of Delegates
10:00 a.m.-11:30 a.m. Riley Room	Professional Liability Committee Meeting
10:00 a.m.-12:00 noon Drayton Room	SC Cardiopulmonary Rehabilitation Association Board of Directors Meeting
10:15 a.m.-11:15 a.m. Booths 22 & 65	Coffee Break
10:30 a.m.-12:00 noon Edmunds Room	<p>SC Society of Plastic & Reconstructive Surgeons Scientific Session</p> <p>"A Primer on Wound Care and Wound Healing" Steven K. White, MD, Myrtle Beach; W. Bryan Rogers, III, MD, Greenville; Rami Kalus, MD, Columbia</p>
10:30 a.m.-11:30 a.m. Fenwick Room	SCIMER Board Meeting
11:30 a.m.-12:30 p.m. 2nd Floor Grand Hall	SC Cardiopulmonary Rehabilitation Association Registration
11:30 a.m.-1:00 p.m. Hampton Room	SCMA Medical Ethics Committee Meeting and Luncheon
12:30 p.m.-5:00 p.m. Willow Ballroom	<p>SC Cardiopulmonary Rehabilitation Association Symposium</p> <p>Welcome: William A. Webster, IV, PhD, President, SCCRA</p>

SCHEDULE OF EVENTS
Friday, May 1, 1992 (continued)

TIME/LOCATION	EVENT
12:30 p.m.-5:00 p.m. Willow Ballroom (continued)	<p>"Clinical Alteration of Plasma Lipoproteins and its Effect on Coronary Heart Disease Rates" John C. LaRosa, MD, FACP, George Washington University Medical Center, Washington, DC</p> <p>"Patient Education in Cardiopulmonary Rehabilitation: Principles and Practice" Pat Comoss, RN, BS, President, American Association of Cardiovascular and Pulmonary Rehabilitation</p> <p>"Motivating and Educating Adults to Exercise: Practical Suggestions to Increase Compliance" Barry Franklin, PhD, FAACVPR, William Beaumont Hospital, Royal Oak, MI</p> <p>"How We are Progressing on Regression" Donald E. Saunders, Jr., MD, USC School of Medicine</p> <p>"Application of Dr. Ornish's Program for Reversing Heart Disease in a Community Cardiac Rehab Program" Pam McCarter, BSN, , Greenville Hospital System</p>
12:30 p.m.-1:00 p.m. Palmetto Courtyard	Auxiliary Champagne Reception Honoring New Officers
1:00 p.m.-2:30 p.m. Louis's Charleston Grill	Auxiliary Presidents' Luncheon
1:00-3:00 p.m. Beauregard Room	<p>SCMA Workshop: "The HONDA: <i>H</i>ypertensive, <i>O</i>bese, <i>N</i>oninsulin-dependent <i>D</i>iabetic with <i>A</i>therosclerosis. Why do these Conditions Co-Exist?"</p> <p>Donald McMillan, MD, University of South Florida, Tampa Ronald Mayfield, MD, MUSC, Charleston Frederick Dunn, MD, Duke University School of Medicine, Durham, NC</p>
1:00 p.m.-2:30 p.m. Gadsden Room	C Chapter of the American Academy of Pediatrics Perinatal Section Business Meeting

SCHEDULE OF EVENTS
Friday, May 1, 1992 (continued)

TIME/LOCATION	EVENT
1:00 p.m.-5:00 p.m. Jenkins/King Room	<p>SC Dermatological Association Meeting and Scientific Session</p> <p>"Serologic Testing in SLE" John T. Provost, MD, Johns Hopkins Medical Institute, Baltimore, MD</p> <p>"Clues to Histopathologic Diagnosis in Dermatology" A. Bernard Ackerman, MD, NYU Medical Center, New York</p> <p>"Melanoma Management 1992" Paul L. Baron, MD, MUSC, Charleston</p> <p>Non-Surgical Treatment of Skin Cancer" David E. Kent, MD, Macon, GA</p>
1:00-5:00 pm Gadsden Room	<p>SC Chapter of the American Academy of Pediatrics Perinatal Section Scientific Session Moderator: T. David Marsh, MD, Columbia</p> <p>"Is High Frequency Ventilation Better Than Conventional Treatment in Neonates?" Waldemar A. Carlo, MD, University of Alabama at Birmingham</p>
1:30 p.m.-5:00 p.m. Magnolia Ballroom	<p>SCMA Plenary Session: "Advances in the Management of Chronic Low Back Pain"</p> <p>Moderator: Kenneth G. Varley, MD, Columbia</p> <p>Speakers: J. Talley Parrott, MD, ORS, Columbia Richard Rauch, MD, AN, Bowman Gray School of Medicine R. Norman Harden, III, MD, N, MUSC, Charleston John P. Booth, MD, FP, Florence William Kee, PhD, MUSC, Charleston</p>
2:00 p.m.-4:30 p.m. Colleton Room	<p>SC Oncology Society Business Meeting and Scientific Session</p>
2:00 p.m.-5:00 p.m. Hampton Room	<p>SCMA Committee on Sports Medicine's Symposium: "Healthy People 2000 — The Physician's Role: Moderator: Frederick E. Reed, MD, Charleston</p>

SCHEDULE OF EVENTS
Friday, May 1, 1992 (continued)

TIME/LOCATION	EVENT
2:00 p.m.-5:00 p.m. Hampton Room (continued)	<p>"Profiling, Screening and Identifying Health Risks" Michael Cox, PhD, Director, Human Performance Division, Graduate Hospital, Wayne, PA</p> <p>"Can Health Education Make a Difference?" Fran Wheeler, PhD, Center for Health Promotion, DHEC</p> <p>"Developing Motivational Tools/Techniques for an Exercise Program" Susan Provence, Health Education Consultant, Center for Health Promotion, DHEC</p> <p>The Healthy People 200 Initiative — The Physician's Role" Michael Cox, PhD</p> <p>Panel Discussion: Frederick E. Reed, Jr., MD Michael Cox, PhD Frank Wheeler, PhD Susan Provence</p>
2:30 p.m.-3:30 p.m. Booths 22 & 65	Coffee Break
3:00 p.m.-5:00 p.m. Drayton Room	<p>SCMA Workshop: "You've Gotta Have a Heart"</p> <p>Moderator: Terry Payton, MD, Columbia</p> <p>"Integrating Prevention into Clinical Practice" David R. Garr, MD, MUSC</p> <p>"Integrating Value into Clinical Care" David Pryor, MD, Co-Director, Duke University Cardiovascular Data Bank, Durham, NC</p> <p>"Putting it all in Perspective" William H. Hester, MD, McLeod Regional Medical Center, Florence</p> <p>Panel Discussion: David R. Garr, MD, David Pryor, MD, William H. Hester, MD, Fred Crawford, MD, MUSC, Charleston</p>

SCHEDULE OF EVENTS

Friday, May 1, 1992 (continued)

TIME/LOCATION	EVENT
5:00 p.m.-6:30 p.m. SCCRA President's Suite	SC Cardiopulmonary Rehabilitation Association Reception
5:30 p.m.-7:30 p.m. Suite 2J	SC Chapter of the American Academy of Pediatrics Cocktail Reception
6:00 p.m. Beauregard Room	MUSC Reunion: December Class of 1943
7:00 p.m.-8:30 p.m. Drayton Room	SC Neurological Association Reception
7:00 p.m. Colleton Room	MUSC Reunions Class of 1947
Willow II Ballroom	Class of 1952
Willow I Ballroom	Class of 1967

Saturday, May 2, 1992

7:00 a.m.-5:00 p.m. 2nd Floor Grand Hall	SCMA Registration—Open
7:00 a.m.-9:00 a.m. Beauregard Room	SC Society of Anesthesiologists Breakfast Meeting
7:30 a.m.-8:30 a.m. Louis's Charleston Grill	SCMA Board of Trustees Breakfast
7:30 a.m.-8:30 a.m. Colleton Room	SC Radiological Society Breakfast Meeting Guest Speaker: Senator Ernest F. Hollings
8:00 a.m.-9:00 a.m. Riley Room	SC Chapter of the American Academy of Pediatrics Executive Committee Meeting

8:00 a.m.-12:00 a.m. Edmunds Room	SC Society of Vascular Surgeons Scientific Ssession "Current Trends in Renovascular Hypertension Richard Dean, MD, Bowman Gray School of Medicine Winston-Salem, NC Case Presentations Scientific Paper Presentations
8:00 a.m.-12:00 noon Dogwood Room	SC Dermatological Association Meeting and Scientific Session

SCHEDULE OF EVENTS
Saturday, May 2, 1992 (continued)

TIME/LOCATION	EVENT
8:00 a.m.-12:00 noon Dogwood Room (continued)	<p>"Connective Tissue Update" Thomas T. Provost, MD, Johns Hopkins Medical Institute, Baltimore, MD</p> <p>"Mythology in Dermatopathology: A Bernard Ackerman, MD, NYU Medical Center New York, NY</p> <p>"Skin Grafting in the Office" David E. Kent, MD, Macon, GA</p> <p>"Medicare Update" Tommy Walters, Ombudsman Medicare B/PEN, Columbia</p>
8:30 a.m.-12:00 noon Willow Ballroom	<p>SCMA Plenary Session "Infectious Diseases"</p> <p>Introduction and Overview: Peter C. Dandalides, MD Spartanburg Regional Medical Center</p> <p>"Immunoprophylaxis: Update on Vaccines and Immunoglobulin Use" Ronald B. Turner, MD, MUSC, Charleston</p> <p>"Immunodiagnostics: What's New and Useful?" Gabriel Virella, MD, PhD., MUSC, Charleston</p> <p>"Immunotherapy: Current Treatment of Septic Shock" Charles S. Bryan, MD, USCSM, Columbia</p>
8:30 a.m.-12:00 noon Hampton Room	SC Neurological Association Scientific Session
8:30 a.m.-12:00 noon. Jenkins/King Room	<p>SC Radiological Society Scientific Session</p> <p>"Cervical Spine Trauma" John H. Harris, Jr., MD, University of Texas Medical Center, Houston, TX</p> <p>"Facial Trauma" John H. Harris, Jr., MD, University of Texas Medical Center, Houston, TX</p> <p>"Expectations of Radiologists by Physicians in Emergency Medicine" James Raymond, MD, Richland Memorial, Columbia</p>

SCHEDULE OF EVENTS

Saturday, May 2, 1992 (continued)

TIME/LOCATION	EVENT
9:00 a.m.-10:00 a.m. Dogwood Room	SC Society of Pathologists Scientific Session "Mythology in Dermatopathology" A. Bernard Ackerman, MD, NYU Medical Center
9:00-11:30 a.m. Fenwick Room	SC Society of Physical Medicine and Rehabilitation Moderator: Robert G. Schwartz, MD, Greenville "The SCMA Occupational Medicine Committee" Marion F. McFarland III, MD, Columbia "The Doctor/Patient Relationship in Workers' Compensation" Robert G. Schwartz, MD, Greenville "Future Directions of the SC Workers' Compensation Commission" Commissioner R. Walter Hundley, Columbia "Disability vs. Impairment and the Workers' Compensation Hearing" Commissioner Thomas Marchant, III, Columbia " "The SC Workers' Compensation Commission from an Administrative Perspective" Mr. Mike LeFever, Executive Director, Columbia
9:00 a.m.-12:00 noon Cypress Room	SC Chapter of the American Academy of Pediatrics Scientific Session Opening Remarks: Joseph H. Laver, MD, MUSC, Charleston "Growth Factors for the Pediatrician" Joseph H. Laver, MD, Charleston "Sickle Cell Disease" Miguel R. Abboud, MD, MUSC, Charleston Demonstration of Office Instruments "Immune Mediated Thrombocytopenias" Julio C. Barredo, MD, MUSC, Charleston "Coagulation Tests" John Lazarchick, MD, MUSC, Charleston

SCHEDULE OF EVENTS

Saturday, May 2, 1992 (continued)

TIME/LOCATION	EVENT
9:00 a.m.-12:00 noon Drayton Room	<p>SC Society of Anesthesiologists: "Successful Acute and Chronic Pain Management" Thomas A. Duc, MD, MUSC, Charleston</p> <p>"Non-Cardiac Surgery in the Patient with Valvular Heart Disease: Anesthetic Considerations" Paul Echenbrecht, MD, USC School of Medicine</p> <p>"Anesthetic Considerations in the Patient Undergoing Major Vascular Surgery" Michael J. Murray, MD, PhD, The Mayo Clinic, Rochester, MN</p>
9:00 a.m.-12:30 p.m. Magnolia Ballroom	<p>SC Cardiopulmonary Rehabilitation Association Symposium</p> <p>"Current Trends in Cardiovascular Medicine in SC" Carlton A. Hornung, PhD, MPH, USCSM, Columbia</p> <p>"How Much Exercise is Enough for the Cardiac Patient? The Case for Moderation" Barry Franklin, PhD, William Beaumont Hospital Royal Oak, MI</p> <p>"The Vegetarian Diet: The Antioxidant Vitamins", Kitty Gurkin, RD, Private Consultant, Durham, NC</p> <p>"Healthy People 2000 and the Physician's Role in Exercise Prescriptions" Nicholas A. DiNubile, MD, Llanerch Medical Center, Havertown, PA</p>
9:30 a.m.-11:00 a.m. Gadsden Room	SOC PAC Board Meeting
10:15 a.m.-12:00 noon Beauregard Room	SC Society of Pathologists Business Meeting
12:15 a.m.-1:00 p.m. Louis's Charleston Grill	SC Radiological Society Reception
12:45 p.m.-2:15 p.m. Live Oak Ballroom	<p>SOC PAC Luncheon</p> <p>Guest Speaker: To Be Announced</p>
1:00 p.m.-3:00 p.m. Louis's Charleston Grill	<p>SC Radiological Society Luncheon and Meeting</p> <p>Guest Speaker: James Moorefield, MD, Chairman, American College of Radiology Board of Chancellors</p>

SCHEDULE OF EVENTS

Saturday, May 2, 1992 (continued)

TIME/LOCATION	EVENT
1:00-6:00 p. m. Jenkins/King Room	SC Academy of Family Physicians Board Meeting
3:00 p.m.-4:30 p.m. Drayton Room	SC Medical Directors' Association Scientific Session "Clinical and Administrative Implications of OBRA: Update on Regulations Affecting Long Term Care Facilities" (Sponsored by Mead Johnson Pharmaceuticals) Roger J. Cadieux, MD, Harrisburg, PA
4:30 p.m.-5:00 p.m. Drayton Room	SC Medical Directors' Association Business Meeting
5:00 p.m.-6:00 p.m. Beauregard Room	SC Medical Directors' Association Reception (Sponsored by SC Health Care Association)
6:30 p.m.-7:30 p.m. Dogwood/Cypress Ballrooms	SCMA Presidents' Reception (Compliments of Carolina Physicians Advisory Service)
7:30 p.m.-12:00 a.m. Live Oak/Magnolia/ Willow Ballrooms	SCMA President's Inaugural Banquet

SUNDAY, May 3, 1992

7:00 a.m.-10:30 a.m. 2nd Floor Grand Hall	SCMA Registration Open
7:30 a.m.-8:30 a.m. Louis's Charleston Grill	SCMA Board of Trustees Breakfast
8:30 a.m.-12:30 p.m. Dogwood/Cypress/ Live Oak Ballrooms	SCMA House of Delegates
12:30 p.m.-1:00 p.m. Drayton Room	SCMA Board of Trustees Reorganization Meeting

1992 DELEGATES AND ALTERNATES

ABBEVILLE	A. Grady Oliver, MD		Baird D. Oldfield, MD
AIKEN	Not Available		Stuart C. Owens, MD
ALLENDALE	H. Lucius Laffitte, MD		Stephen I. Schabel, MD
ANDERSON	Stuart Barnes, MD		C. Willy Schwenzfeier, III, MD
	Tom Crocker, MD		Stephanie Smith-Phillips, MD
	Leonard Douglas, MD		Mike O. Tyler, MD
	Kenneth Smith, MD	CHEROKEE	Not Available
BAMBERG	Herbert Moskow, MD	CHESTER	Samuel R. Stone, MD
Alternate:	Dale Padgett, MD	CHESTERFIELD	Winston Godwin, MD
BARNWELL	Not Available	Alternate:	Peter Keyser, MD
BEAUFORT	William. Besterman, Jr., MD	COLLETON	Frank Biggers, MD
	John Brennan, MD	Alternate:	Riddick Ackerman, III, MD
	H. T. Pearce, MD	COLUMBIA	Richard M. Bell, MD
	Francis Rushton, Jr., MD		Eloise A. Bradham, MD
BERKELEY	Sam O. Schumann, Sr., MD		Charles S. Bryan, MD
Alternate:	Sam O. Schumann, Jr., MD		Belton D. Caughman, MD
CHARLESTON	David Adams, MD		Kim Chillag, MD
	J. Gilbert Baldwin, MD		Kathleen P. Flint, MD
	Nabil K. Bissada, MD		Jack H. Gottlieb, MD
	William Creasman, MD		E. Cantey Haile, Jr., MD
	Bertram C. Finch, MD		Thomas E. Hearon, III, MD
	Alan Fogle, MD		Warren F. Holland, MD
	Richard Gross, MD		Pierre G. Jaffe, MD
	Richard C. Hagerty, MD		Lee T. Jordan, MD
	Lucinda Halstead, MD		Edward E. Kimbrough, MD
	D. Michael Hull, MD		M. Tucker Laffitte, III, MD
	Mark Kolender, MD		Robert N. Milling, MD
	Leonard Lichtenstein, MD		Herbert E. Niestat, MD
	I. Grier Linton, Jr., MD		James C. Reynolds, MD
	Thomas Lucas, Sr., MD		James W. Stands, MD
	Michael Maginnis, MD		Charles N. Still, MD
	Bright McConnell, III, MD		John L. Ward, MD
	R. Ramsay Mellette, MD		M. Craig Ward, MD
	Roy Nickles, MD		Gerald A. Wilson, MD
	Alan Nussbaum, MD	Alternates:	A. McKay Brabham, MD
	Alexander Ramsay, MD		Vincent J. Degenhart, MD
	Allen Rashford, MD		Frampton W. Henderson, MD
	Daniel Ravenel, MD		Philip W. Kinder, MD
	Carolyn Reed, MD		Joseph W. Taber, Jr., MD
	Edmund Rhett, Jr., MD		A. Daniel Vallini, MD
	Raymond Rosenblum, MD		Alexander G. Donald, MD
	Don A. Schweiger, MD	DARLINTON	Robert Bullard, MD
	Kenneth Spicer, MD		Rion Dixon, MD
	Michael J. Tapert, MD	DILLON	None
	W. Curtis Worthington, Jr., MD	DORCHESTER	Rick Bolt, MD
Alternates:	Mary E. Baker, MD		David Castellone, MD
	Bruce D. Ball, MD		Bijoy Das, MD
	J. Austin Ball, MD		Fritz Goulding, MD
	Louis E. Costa, III, MD	Alternates:	Lloyd Mandel, MD
	Courtney Fisher, MD		Joe Moore, MD
	Frank E. Harper, MD	EDISTO-	W. E. Connor, MD
	Robert Irvin, MD	ORANGEBURG	S. G. Patterson, MD
	Pearon G. Lang, MD		R. W. Rhame, Jr., MD
	Roderick MacPherson, MD		G. R. Weigle, MD
	Robert J. Malcolm, MD	FAIRFIELD	Harmon Patrick, MD

DELEGATES AND ALTERNATES

Alternate:	Edwin C. Hentz, MD	LANCASTER	Andrew Pate, MD
FLORENCE	J. P. Booth, MD	LAURENS	Holbrook Raynal, MD
	Al Dawson, MD		Rufus W. Watkins, MD
	Jim Hammond, MD	LEXINGTON	Charles F. Crews, MD
	Bill Hester, MD		Robert L. Galphin, MD
	Barry Monroe, MD		James L. Hahn, MD
	Steve Ross, MD		J. D. Whitehead, Jr., MD
	Mark Steadman, MD		Frank W. Young, MD
	Hugh Thompson, MD	Alternate:	G. Tripp Jones, MD
GEORGETOWN	Gerald E. Harmon, MD	MARION	Hugh V. Coleman, MD
GREENVILLE	J. M. Alexander, MD		James S. Garner, IV, MD
	Joy S. Anglea, MD	MARLBORO	James McAlpine, MD
	William P. Bonner, MD	Alternate:	W. Church Whitner, MD
	Raymond E. Bradley, Jr., MD	NEWBERRY	Not Available
	J. Duncan Burnette, Jr., MD	OCONEE	Edward H. Booker, MD
	William R. Craig, III, MD		Robert L. Miles, MD
	William B. Evins, MD	Alternates:	Joseph B. James, MD
	George M. Grimball, MD		Conrad K. Shuler, MD
	Raymond V. Grubbs, MD	PICKENS	Kyle Parks, MD
	Lyn H. Hammond, MD		Thomas Parrish, MD
	Lloyd E. Hayes, MD		Alan J. Thompson, MD
	S. R. Littlepage, III, MD		Boyce Tollison, MD
	Woodrow W. Long, Jr., MD	RIDGE	Hugh Morgan, MD
	Joseph C. McAlhany, Jr., MD	SPARTANBURG	Jay Bearden, MD
	T. Wayne McDonald, MD		Ernest Camp, MD
	Arthur G. Meakin, MD		Rob Cochran, MD
	Ted J. Roper, MD		Charles Fogarty, MD
	Daggett O. Royals, MD		Earl Godfrey, MD
	John R. Sanders, MD		Bill Hill, MD
	John R. Satterthwaite, MD		D. C. Hull, MD
	Pam S. Snape, MD		W. F. James, Jr., MD
	Jesse R. Stafford, MD		John Johnson, MD
	William R. Stoddard, Jr., MD		Ann Kelly, MD
Alternates:	Patricia P. Westmoreland, MD		Louis Knoepp, MD
	John P. Evans, MD		Eric Nelson, MD
GREENWOOD	Joseph Beaudrot, MD		Robert Taylor, MD
	John Funke, III, MD		Mark Visk, MD
HAMPTON	Not Available	Alternates:	Sami Elhassani, MD
HORRY	John Charles, MD		Tim Llewelyn, MD
	Kim Goh, MD		John Tate, MD
	Stuart Haskin, MD	SUMTER-	Linwood Bradford, MD
	Ed Hayes, MD	CLARENDON-	Allan Bruner, MD
	David Kee, MD	LEE	Perry Davis, MD
	John Molnar, MD		Jim Ingram, MD
	Eston Williams, MD	Alternates:	Thomas Hepfer, MD
Alternates:	David Bjerken, MD		Usah Lilavivat, MD
	John Charles, MD		Clarence Coker, MD
	Bob Jones, MD		Thomas Cox, MD
	Ken Krzyniak, MD	UNION	Stan James, MD
	Richard Myers, MD	Alternate:	Jim Gowan, MD
	Henry Saunders, MD	WILLIAMSBURG	Howard Poston, MD
	Frank Sloan, MD	Alternate:	Harry Floyd, MD
JASPER	J. M. Bennett, Jr., MD	YORK	Terry Dodge, MD
KERSHAW	Marguerite M. Carlton, MD		
	Thomas Joseph, MD		

DELEGATES AND ALTERNATES

James Jewell, MD	Woody Sanford, MD
Chris Schroeder, MD	Alternate: Charles Griffin, Jr., MD
William F. Strait, MD	SC CHAPTER OF THE AMERICAN COLLEGE OF
SC SOCIETY FOR ALLERGY & CLINICAL	SURGEONS N/A
IMMUNOLOGY Charles H. Banov, MD	SC SURGICAL SOCIETY
Alternate: Bruce Ball, MD	H. Biemann Othersen, Jr., MD
SC SOCIETY OF ANESTHESIOLOGISTS	SC THORACIC SOCIETY N/A
SC CARDIAC & THORACIC SURGICAL	SC UROLOGICAL ASSOCIATION
SOCIETY Robert Sade, MD	L. Thomas Barnett, MD
Alternate: John Yarborough, MD	Alternate: Clifton L. Williams, Jr., MD
SC DERMATOLOGICAL ASSOCIATION	SC VASCULAR SURGICAL SOCIETY
Kenneth R. Warrick, MD	YOUNG PHYSICIANS SECTION
SC CHAPTER, AMERICAN COLLEGE	Dina R. Grice, MD
OF EMERGENCY PHYSICIANS	Alternate: Stuart Owens, MD
Ken DeHart, MD	RESIDENT PHYSICIANS SECTION
Alternate: Debra Perina, MD	John B. Eberly, MD
SC ACADEMY OF FAMILY PHYSICIANS	Wayne Frei, MD
William H. Hester, MD	Alternate: Debra Milling, MD
Alternate: Stoney A. Abercrombie, MD	HOSPITAL MEDICAL STAFF SECTION
SC SOCIETY OF INTERNAL MEDICINE	Charles Geer, MD
Vasa W. Cate, MD	DEAN, COLLEGE OF MEDICINE, MUSC
SC ASSOCIATION OF NEUROLOGICAL	Layton McCurdy, MD
SURGEONS	DEAN, USC SCHOOL OF MEDICINE
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Alternate: Darwin Kellar, MD	MUSC MEDICAL STUDENT SECTION PRESIDENT
SC NEUROLOGICAL ASSOCIATION	USC MEDICAL STUDENT SECTION PRESIDENT
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SC ONCOLOGY SOCIETY	James Ingram, MD
James McFarland, MD	SPEAKER OF THE HOUSE OF DELEGATES
Alternate: Joseph Jenrette, MD	O. Marion Burton, MD
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Alternate: Thomas Mather, MD	TWO IMMEDIATE PAST PRESIDENTS
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John Evans, MD	Daniel W. Brake, MD
Alternate: Joe N. Jarrett, Jr., MD	PHYSICIAN MEMBER OF THE BOARD OF DHEC
SC SOCIETY OF OTOLARYNGOLOGY AND	Toney Graham, MD
HEAD AND NECK SURGERY	PRESIDENT OF BOARD OF MEDICAL
William R. Lomax, MD	EXAMINERS
SC SOCIETY OF PATHOLOGISTS	Stephen I. Schabel, MD
Hans K. Habermeyer, MD	AMA DELEGATES
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PEDIATRICS Ben C. Pendarvis, Jr., MD	Donald G. Kilgore, Jr., MD
Alternate: Francis E. Rushton, Jr., MD	Walter J. Roberts, Jr., MD
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PHYSICIANS Bruce W. Usher, MD	Charles R. Duncan, Jr., MD
SC SOCIETY OF PLASTIC & RECONSTRUCTIVE	Daniel W. Brake, MD
SURGEONS William A. Terranova, MD	J. Chris Hawk, III, MD
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Alternate: Dixie Hines, MD	President-elect
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OFFICER REPORTS

THE PRESIDENT

My agenda as SCMA President has been simple: address the issues and emphasize the importance of being a good physician. When I started the year, I didn't have an agenda for myself or the SCMA. I wanted to be proactive, and yet I realized that one year was too short a time to solve the complex problems of access for the uninsured, rapidly-rising healthcare costs, and over-regulation of our profession. We needed a realistic goal, one that would bring out the best in all of us, as we worked for elusive solutions.

I couldn't predict how my inaugural speech on "The ABC's of Being a Good Physician" would be received. The television reporter who interviewed me shortly beforehand was certainly not impressed. He wanted my answers to those "insoluble problems." However, physicians responded positively and that encouraged me to continue the emphasis. I included it as I spoke to county medical society meetings. Through the President's Page I have used our role as good physicians as a yardstick. I have asked myself, "What does this issue have to do with our role as good physicians? Is there an important message for physicians that might be overlooked? Can our approach to this issue make us better physicians?"

During the course of the year, I have encountered the same problems as each of you in trying to be a good physician. When I've been too busy, my bedside manner has suffered. At times I haven't been able to find the fun and the humor in my patients and my practice. I'm sure at times I could have done better in maintaining the dignity of my patients, colleagues, and employees. I'm not unique: these are problems we all face. The important point for us to remember is that we have the potential to be good physicians. We can fulfill that potential if we work at it.

Three main issues have challenged the medical profession and SCMA this year.

1. RBRVS and physician payment reform.

2. HIV testing of physicians and healthcare workers

3. Major reform of our healthcare delivery system.

The Resource-Based Relative Value Scale has been controversial since its conception. It is the end result of many years' work to develop a more equitable payment system with increased payment for cognitive services and decreased payment for procedures. In June when HCFA announced the new physician payment schedule with a 16 percent reduction in the conversion factor for physicians' fees, the AMA spearheaded a major grassroots campaign. Over 100,000 letters were sent to Congress and HCFA. When we attended the AMA National Political Education Conference in Washington in October, RBRVS and the Medicare fee schedule were the main topics. Numerous cosponsors were obtained in the House and Senate. Eventually HCFA altered the fee schedule so that the final cut was reduced to 5.5 percent. Many of you told me that you had written HCFA and Congress, and your personal effort was essential to the success which we achieved.

As January approached, we realized that the new CPT Evaluation and Management Codes may well be as big a problem as the new RBRVS fee schedule. The new codes and definitions were released so late that none of us had time to study and prepare to use them. At the SCMA we looked for ways to help our physicians cope with this change. We devised charts for the new office and hospital codes and mailed them to our members. They are helpful in my practice, and I hope that you have found them equally useful. We have scheduled additional seminars as we feel that the training sessions sponsored by our Medicare carrier were inadequate and that many physicians and office staffs will need further assistance.

The second major issue was HIV testing for physicians and healthcare workers. The CDC recommendations emphasized universal

precautions and restrictions on HIV-positive physicians only for the performance of "exposure-prone procedures." The SCMA quickly realized that a law concerning HIV testing would be passed, and that it was important for physicians to have a system for confidential testing. The statewide HIV/HBV Safety Network was set up to provide voluntary, confidential testing. Its Policy Panel was established to make decisions concerning the operation of the program and to serve as the core for the statewide Expert Review Panel. Since the CDC has not developed the list of exposure-prone invasive procedures as originally planned, the Policy Panel does not currently plan to restrict a seropositive physician from performing certain procedures. Rather, the Panel would counsel the individual practitioner on infection control guidelines, less risky methods of performing certain procedures, and any practice modifications that are deemed advisable. After considerable discussion, the SCMA has decided to issue letters certifying compliance with the CDC recommendations rather than certificates.

The SCMA has been both praised and criticized for development of this HIV testing system. Many physicians feel that testing of healthcare workers is unnecessary, and that we should simply oppose it. The SCMA board felt that since the law required that a system for testing be developed, it was in the best interest of South Carolina physicians to have a good system that insured confidentiality. We felt the SCMA could develop that system better than other groups such as local hospitals, DHEC, or the State Board of Medical Examiners. At this time the interest in HIV testing has not been great, but that may well change, and the SCMA will have a good testing program in place.

The third major issue confronting the medical profession is major reform of our healthcare delivery system. The problem is serious, the debate is intense, but it is unlikely that any major changes will be accomplished during this election year. The AMA presented

the first major proposal for healthcare reform in March 1990. Its Health Access America plan was developed to "insure access to the benefits of the American healthcare system for every citizen." In 1990 the SCMA House of Delegates adopted Health Care 2000, a nine point program for reform, developed under the leadership of Dan Brake. Although access is still a major component of all reforms, cost has clearly become the dominant issue.

President Bush's plan is similar to the AMA plan. It builds on the strengths of our current system, rather than dismantling it in favor of a government-run, budget-driven, centrally-controlled system. The plan has been widely criticized as inadequate to solve the access and cost problems. The weakness of all the proposals is a lack of realistic cost containment measures. Neither political party has been willing to confront the difficult problem of rationing. Everybody wants accessibility, quality, affordability and security, but where is the American public willing to compromise? Fortunately, as the issue is debated, most people now realize that if it were an easy problem, we would have solved it long ago.

Representative Billy Houck, a retired physician from Florence, submitted a bill (H. 4244) that would establish a State Health Services Cost Review Commission. The Commission would set charges for hospitals, nursing homes, physicians, and other providers for inpatient services. Physicians' fees could not be set below the 90th percentile of the usual, customary, and reasonable (UCR) charge for the specific service.

After careful study and consideration, the SCMA Board of Trustees made the difficult decision to support the bill. The problem of rising healthcare costs has reached the critical 1 Mahon has assembled an excellent staff, which is "user friendly." They want to help you. The Board of Trustees does a conscientious job in carrying out the policies of the SCMA. However, there is always room

for improvement. The auxiliary remains our greatest untapped resource, and we need to get our talented spouses more involved with us. Perhaps a state-wide voter registration effort for physicians and spouses would be a good project. Our committees are relatively inactive with poor attendance from the rank and file. Our Leadership Conference in February is a good opportunity to learn about current issues, but attendance has been poor. The board should consider having a Leadership Conference in the fall with an expanded program that includes meetings for all the SCMA committees.

It has been an honor and a privilege to be the President of the SCMA, and I thank you, the House of Delegates, for the opportunity to serve. I thank Bill Mahon, Barbara Whittaker, Joy Drennen, and the entire SCMA staff for all their assistance. The Board of Trustees has been very supportive of my efforts, not only this year, but during my six prior years on the board. I am especially indebted to Ed Catalano, the Chairman of the Board, who has attended many meetings on my behalf. The SCMA Presidency is a big job under any circumstance. It is more difficult when one lives two hours from Columbia, and I don't think I could have handled it without Ed Catalano's exceptional support.

Your next President, Bart Barone, has served as trustee for nine years, treasurer, and secretary. He has been on the JUA Board for many years and currently is the vice-chairman. I offer him my full support, and I am sure he will be an excellent president.

The challenges to our profession will continue. We must support the SCMA and AMA as they struggle to improve our healthcare system.

As individuals we face an even greater challenge. As the changes unfold, we must strive to be good physicians, to maintain the highest professional and ethical standards, and to serve our community and our God. Thank you again for the high honor of being your president.

J. Chris Hawk, III, M.D., President

THE SECRETARY

The good news is that our association remains strong and healthy and we represent the majority of the physicians in South Carolina. This enables us to maintain a high-level presence and strong voice in our state's affairs.

The bad news is that our membership percentages have not changed much over the last five to ten years. This has been a frustration to several succeeding secretaries and to the board. We will continue to do the best we can to improve these numbers. We need your help and we appreciate what you have done to help us in the past.

There are several innovations that are taking place this year. Several of the large counties are initiating a one-on-one visitation program to personally recruit new members. We hope to have some results available at the Annual Meeting from these efforts. The secretary this year has personally called each new licensee in the state who is not a resident in training. We also hope to have some results from this program at the Annual Meeting. Finally, we have continued the efforts of past secretaries, in particular, Dr. Barone, to work with the Dean's office at the Medical University in Charleston to nurture membership at that institution.

The important thing to keep in mind is that we are in a difficult environment now. The practice of medicine is being scrutinized by all sides of our society. It is now more important than ever to have a strong medical association. We need to encourage our members and our colleagues to join and to maintain their membership in our organization.

Thanks again for all your help in the past and your support this year and over the years to come.

Stephen A. Imbeau, MD
Secretary

THE TREASURER

As I complete my second year as Treasurer of the South Carolina Medical Association, I would like to present a short report about the SCMA's financial condition. A more comprehensive report will be presented to the 1992 House of Delegates in Charleston.

For the year ended June 30, 1991, the SCMA had net expenses over revenue including depreciation of \$65,658. However, if you exclude depreciation expense of \$34,334 the SCMA had net operating expenses over revenue of \$31,324. The SCMA had a Fund Balance of \$1,236,489 as of June 30, 1991.

The SCMA's current financial condition for the seven months ended January 1992 projects a positive financial position. At the end of January, the SCMA had revenue over expenses of \$90,858. We currently project that the SCMA will have an excess of revenue over expenses for this fiscal year.

The investment policies of the SCMA and its affiliates have continued in a similar manner, as in past years, with diversified investments in federal treasury and agency notes and money market funds.

It is the SCMA's policy to maintain total reserves equal to one year's operating budget and any excess should be allocated to cover future operational deficits. Therefore, the permanent and operating reserves will remain constant for the year ending June 30, 1992.

The House of Delegates in 1988 approved a dues increase of \$100 to be implemented fractionally over a period of three years. We are presently in the final phase of the increase. We have a history of operating on a sound financial basis and, with this increase in receipts, we shall continue to do so.

For the fiscal year ending June 1993, we project a surplus of revenue over expenses.

I thank the membership for the privilege of serving as your treasurer for the past year.

S. Nelson Weston, MD
Treasurer

THE CHAIRMAN OF THE BOARD

This past year has been distinguished by its high level of controversy, activity and change. The recent dues increase, coupled with the record high membership, has apparently stabilized our financial status. These two factors should combine to preclude increases for the foreseeable future. We have been notified by the AMA that our increased AMA participation will entitle our state to an additional delegate and alternate delegate slot.

The board has not avoided controversial issues and this proactive approach has resulted in an increased understanding of issues and greater solidarity on both a specialty and geographic basis. Our HIV/HBV Safety Network is an excellent illustration. Federal legislation has been passed mandating compliance with the CDC guidelines by each state by October 1992. We have set up a statewide mechanism to comply with these guidelines which would guarantee confidentiality for the tested physician and/or healthcare worker. Our program incorporates an expert review panel, an anonymous procedure review process and includes an educational component. Many hours were spent meeting with representatives of the South Carolina Hospital Association, DHEC and the South Carolina State Board of Medical Examiners as well as physicians from around the state in an attempt to gain approval of our program.

We spent much time in discussions with the South Carolina Board of Nursing, South Carolina Board of Medical Examiners and the Academy of Family Practice in developing guidelines for nurse practitioner prescribing. After much discussion, the board voted, with certain conditions, to support extension of the certificate of need process to the outpatient setting. We also came much closer than many thought possible towards passing a cigarette tax for Medicaid funding. Though that battle was lost, the cause is still supported. This is

especially true since the recently proposed \$220 medical license tax would generate approximately one-third of the funds that a one cent per package cigarette tax would raise. Support of the Houck bill for cost containment demonstrated a frustration by the board with healthcare system costs and a commitment to try to bring all providers to the table in an attempt to control costs.

The SCMA staff has attempted to ease the transition associated with RBRVS implementation. Plans are underway to restructure and shorten the Annual Meeting yet maintain as much substance as possible. Randy Smoak fell two votes short of election to the AMA Board of Trustees last June and we are working to insure that he will be elected to the board at the upcoming AMA Annual Meeting. Personal contributions to this campaign are needed and will be greatly appreciated. Since we are such a small state, extra effort will be required on everyone's part to make our campaign successful.

Over the next several years, more than ever before, physicians will need to speak with an informed and unified voice. The importance of the AMA and SCMA cannot be overemphasized and membership is critical. There will be significant legislation passed in the upcoming two years regarding the provision of health care and the mechanisms for reimbursement of this health care. We must participate in the process rather than observe and react. Thank you for the opportunity to serve.

Edward W. Catalano, MD
Chairman of the Board

THE SPEAKER OF THE HOUSE

The 144th Annual Meeting and Scientific Assembly of the SCMA will be held April 29 — May 3, 1992, in the Omni Hotel at Charleston Place. This is the sixth year our meeting will be held in this exciting location. The clinical sessions and social events should generate much enthusiasm. Dr. Gerard Jebaily

and his CME Committee have arranged an outstanding array of speakers to update us in various aspects of medicine. We will have plenary sessions on a changing U.S. health policy, assisted reproductive technologies, advances in management of chronic low back pain and infectious diseases. Our other scientific sessions and those of our specialty societies will include topics such as cardiac rehabilitation, health education, a Medicare update, disability and workers' compensation, pediatric hematology/oncology and geriatric medicine. At least ten of our state's specialty societies will hold their meetings during our annual gathering. Approximately 20 CME credit hours can be obtained beginning Wednesday afternoon. There will be a special risk management program for new physicians entitled, "Risk Management in the 90s: Helping Each Other in a Risky Business."

Special guests for the week will include Dr. Joseph T. Painter, Chairman of the Board of the American Medical Association. The SOCPAC Luncheon should also provide an overview on changes in our healthcare delivery system that will be influenced by the political process. On Saturday evening, we will honor Dr. Bart Barone, our President-elect, at the Inaugural Banquet.

Your Board of Trustees, officers and staff have worked this year to implement those resolutions and recommendations adopted by the House of Delegates at its 1991 meeting and included with this report. The delegates urged the Department of Education to adopt comprehensive health education in schools, expand the presence of school nurses and teach physical education down to the kindergarten level. The house also adopted guidelines for helping prevent inappropriate acquisition of multiple controlled substance prescriptions and they developed an SCMA policy that laser surgery only be performed by licensed practitioners of medicine in surgery who are appropriately credentialed in surgery by their institution. The delegates implemented several bylaw changes regarding terms of trustees and officers.

OFFICER REPORTS

As you peruse the resolutions from last year and listen to various staff and officer reports including that of our executive vice president, you will undoubtedly see that the directions you set for our association have resulted in numerous successes this year. Our organization has had a very positive influence on our state Legislature in matters regarding the well-being of our patients and practices. The effects of our tort reform activities are continuing to be felt in our professional liability insurance premiums. Your president, president-elect and board chairman, along with key staff, have accessibility and credibility with our Congressional Delegation in Washington. Their input to key congressmen and senators should help in our plight with Medicare.

Your full-time SCMA staff continues to work to assure that the House of Delegates functions as a completely representative body for our membership. We continue to have increased interest in our body from the specialty society delegates and this is particularly pleasing. We want to continue to enhance the spontaneity and effectiveness of our body and to improve the opportunity for individual delegate input. In these and other matters we again owe a debt of gratitude to our hardworking Executive Vice President, Bill Mahon, and his staff that serves us so well. These men and women are guarding our interests and those of our patients. When you see them at this meeting, don't forget to thank them for all they do for us.

O. Marion Burton, MD
Speaker of the House

YOCON® YOHIMBINE HCl

Description: Yohimbine is a 3a-15a-20B-17a-hydroxy Yohimbine-16a-carboxylic acid methyl ester. The alkaloid is found in Rubaceae and related trees. Also in Rauwolfia Serpentina (L) Benth. Yohimbine is an indolalkylamine alkaloid with chemical similarity to reserpine. It is a crystalline powder, odorless. Each compressed tablet contains (1/12 gr.) 5.4 mg of Yohimbine Hydrochloride.

Action: Yohimbine blocks presynaptic alpha-2 adrenergic receptors. Its action on peripheral blood vessels resembles that of reserpine, though it is weaker and of short duration. Yohimbine's peripheral autonomic nervous system effect is to increase parasympathetic (cholinergic) and decrease sympathetic (adrenergic) activity. It is to be noted that in male sexual performance, erection is linked to cholinergic activity and to alpha-2 adrenergic blockade which may theoretically result in increased penile inflow, decreased penile outflow or both.

Yohimbine exerts a stimulating action on the mood and may increase anxiety. Such actions have not been adequately studied or related to dosage, although they appear to require high doses of the drug. Yohimbine has a mild anti-diuretic action, probably via stimulation of hypothalamic centers and release of posterior pituitary hormone.

Reportedly, Yohimbine exerts no significant influence on cardiac stimulation and other effects mediated by B-adrenergic receptors, its effect on blood pressure, if any, would be to lower it; however no adequate studies are at hand to quantitate this effect in terms of Yohimbine dosage.

Indications: Yocon® is indicated as a sympatholytic and mydriatic. It may have activity as an aphrodisiac.

Contraindications: Renal diseases, and patient's sensitive to the drug. In view of the limited and inadequate information at hand, no precise tabulation can be offered of additional contraindications.

Warning: Generally, this drug is not proposed for use in females and certainly must not be used during pregnancy. Neither is this drug proposed for use in pediatric, geriatric or cardio-renal patients with gastric or duodenal ulcer history. Nor should it be used in conjunction with mood-modifying drugs such as antidepressants, or in psychiatric patients in general.

Adverse Reactions: Yohimbine readily penetrates the (CNS) and produces a complex pattern of responses in lower doses than required to produce peripheral a-adrenergic blockade. These include, anti-diuresis, a general picture of central excitation including elevation of blood pressure and heart rate, increased motor activity, irritability and tremor. Sweating, nausea and vomiting are common after parenteral administration of the drug.^{1,2} Also dizziness, headache, skin flushing reported when used orally.^{1,3}

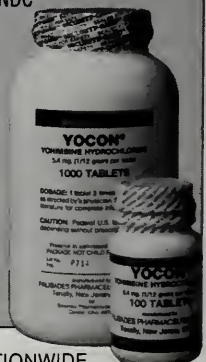
Dosage and Administration: Experimental dosage reported in treatment of erectile impotence.^{1,3,4} 1 tablet (5.4 mg) 3 times a day, to adult males taken orally. Occasional side effects reported with this dosage are nausea, dizziness or nervousness. In the event of side effects dosage to be reduced to 1/2 tablet 3 times a day, followed by gradual increases to 1 tablet 3 times a day. Reported therapy not more than 10 weeks.³

How Supplied: Oral tablets of Yocon® 1/12 gr. 5.4 mg in bottles of 100's NDC 53159-001-01 and 1000's NDC 53159-001-10.

References:

1. A. Morales et al., New England Journal of Medicine: 1221, November 12, 1981.
2. Goodman, Gilman — The Pharmacological basis of Therapeutics 6th ed., p. 176-188. McMillan December Rev. 1/85.
3. Weekly Urological Clinical letter, 27:2, July 4, 1983.
4. A. Morales et al., The Journal of Urology 128: 45-47, 1982.

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SCMA NEWSLETTER

A PUBLICATION OF THE SOUTH CAROLINA MEDICAL ASSOCIATION
Joy Drennen, Editor
798-6207, in Columbia

Contributions welcomed
1-800-327-1021, outside Columbia

April 1992

HIGHLIGHTS OF MARCH 18 BOARD OF TRUSTEES MEETING

The SCMA Board of Trustees took the following actions at the March 18 board meeting.

With regard to legislative matters, the board discussed H.4298 that would require healthcare providers to notify a patient of financial interest in a facility to which they are referring a patient. It was agreed to seek clarification from the bill's sponsor, Representative Corning, of what constitutes financial interest. S.1329 (Protection of Medical Staff Quality Act), intended to address the issue of economic credentialing, was discussed and the board voted to have staff research this bill and the situation in other states.

The Board of Trustees voted to support a proposed bill to prevent transmission of HIV/HBV to patients and healthcare workers (The SC Health Care Professional Compliance Act of 1992). This bill will be introduced by DHEC in order to meet the requirements of the federal law regarding state compliance with the recommendations of the CDC.

The SCMA Constitution and Bylaws require certain criteria which must be met by specialty societies in order to qualify them for a seat in the SCMA House of Delegates. One criterion is that the percentage of physician

members of the society must be at least equal to the percentage of the licensed SC physicians who are SCMA members. Specialty societies which are not in compliance with this requirement have a one-year grace period, and must submit to the SCMA by December of 1992 a membership list in order to be recognized in the House of Delegates the following April.

The board was advised by the AMA that the SCMA would be allowed an additional delegate and alternate delegate to the AMA because of the increased number of AMA members from the SCMA. Elections for these seats will take place during the House of Delegates meeting later this month.

The board heard a report that Doctors Edward Catalano, Chris Hawk and Bart Barone had met with the leadership of the SC Hospital Association and had agreed to establish a joint committee to attempt to create a healthcare reform proposal that would meet the needs of all South Carolinians.

Bruce A. Snyder, MD, Greenville, was elected to fill the vacancy on the board of the Members' Insurance Trust. □

MEDICARE UPDATE

Physician Referral: When referring a patient to a specialty group and you do not know what physician will be seeing the patient, you may refer to the group name. You should be specific, however, when you can.

Critical Care Codes: Medicare is in the process of reviewing and revising its critical care policy. There was much discussion about this at the national medical directors' conference in Baltimore recently, and recommendations for a national policy were made to HCFA. Until an interim policy is issued, however, following is the current stance on critical care: Critical care should only be

billed by a physician when his or her *constant attendance* to a patient is required. As stated previously, this attention is usually rendered in a critical care setting but *may* be rendered on a regular floor setting of a hospital. The law requires that physicians bill the procedure code that most closely describes the service being provided. If critical care is the service that is being provided, critical care is the service that should be billed. (This policy is different from the suggestion included in last month's SCMA newsletter.)

(continued on next page)

Medicare Update (continued)

Revised Medicare 1500 (12/90) Claim Form: By now you should have received a blue Medicare Advisory detailing the process for completing the revised HCFA 1500 claim form. You should review this carefully. Effective May 1, 1992, all claims must be submitted on the revised form.

Medicare Workshops Medicare will be holding half-day workshops on the guidelines for completing the new HCFA 1500 forms. There will be 16 workshops held in 10 cities throughout the state from April 21 to April 30, 1992. If you have not received a registration form, contact Cindy Osborn or Barbara Whittaker at the SCMA for details.

Ordering/Referring Physician UPIN Requirement: ALL physicians and suppliers who bill Medicare for the following services within SC *must* include the order/referring physician's Unique Physician Identification Number (UPIN) on all claims for services furnished on or after March 1, 1992: Hospital

(**ALL** services, inpatient and outpatient); ESRD Facility Services (A4650-A4927, E1510-E1699, M0945-M0994); Parenteral & Enteral (B4034-B9999, Y4100); Ambulance (A0010-A0999, W0901, W0903, W0906); Physical Therapy (97010-97799, M0005-M0009, M0799); MRI (70336 & 70540, 70551-70552, 71550 & 72196, 72141-72149, 73220-73221, 73720-73721, 74181 & 75552, 76400); Cat Scan (70450-70492, 71250-71270, 72125-72133, 72192-72194, 73200-73202, 73700-73702, 74150-74170, 76375); and Ultrasound (76506-76926).

If you get a "development" letter, you must return it with the UPIN number or the claim will be denied.

New Medical Director: Taylor I. Cook, MD is the new Medicare Medical Director.

Direct questions to Medicare Customer Service or to Cindy Osborn or Barbara Whittaker at the SCMA. □

MEDICAID UPDATE

Use of New CPT Codes: Beginning with dates of service March 1, 1992, all Medicaid claims must contain the 1992 CPT codes. Claims submitted with invalid codes will be rejected with error code 717 (invalid procedure code). New CPT codes may be used to report any 1992 services prior to March 1, but not for 1991 services.

Evaluation/Management Office Exam Codes: Any charges for EKGs, laboratory tests and x-rays performed in the physician's office during an office visit may be billed in **addition to** the CPT code for the visit (procedure codes 99201-99215).

Surgery Reimbursement: All evaluation/management services performed up to and including the date of a surgery may be billed separately from the surgery. Any post-operative care rendered up to 30 days after the surgery is reimbursed in the Medicaid surgical allowance and cannot be billed separately unless there is a separate condition not related to the surgery (non-routine follow-up). Then you should use the appropriate modifiers.

Medicaid Sterilization Regulations: Approximately 17 percent of all claims for sterilizations are denied

because Sterilization Consent Forms are not completed in compliance with federal requirements.

Please keep the following guidelines in mind when counseling a patient on sterilization:

- The patient must be 21 years old when s/he signs the consent form.
- The patient must sign the consent form at least 30 but no more than 180 days prior to the sterilization or the expected date of delivery.
- The physician must sign Part IV of the form on or after the date of the surgery (a signature stamp is acceptable). If there is an emergency surgery, sterilization must be at least 72 hours from the time the consent form was signed.

These regulations also apply when performing a sterilization on a patient whose consent form was signed in another physician's office. Remember that women who qualify for Medicaid because of the higher income level (up to 185 percent of poverty) for pregnancy will maintain their Medicaid for only 60 days after delivery. □

OSHA REGULATIONS ON BLOODBORNE PATHOGENS*

The OSHA regulations on bloodborne pathogens will be implemented in stages over the next few months. **Since the printing of the last newsletter, S.C. OSHA has adopted different implementation dates which follow.** As we receive more detailed information on various aspects of the regulations, we will print it in this newsletter. Please watch upcoming issues to stay abreast of the most current information. The SCMA plans to conduct OSHA workshops (see page 8).

Personal Protective Clothing and Equipment (PPCE):

Personal protective clothing and equipment must be suitable to the level of expected exposure. The gear must be readily accessible to employees and available in appropriate sizes. It must be provided by the employer and replaced as necessary.

If an employee is expected to have hand contact with blood or other potentially infectious materials, he or she must wear gloves. Single use gloves cannot be washed or decontaminated. Utility gloves may be decontaminated if they are not compromised. They should be replaced when they show signs of cracking, peeling, tearing, puncturing or deteriorating. Employees who are allergic to standard gloves must be provided hypoallergenic gloves or a similar alternative. Gloves are not required for phlebotomy in voluntary blood donation centers, but are required for all other phlebotomies.

Eye and mouth protection such as goggles, glasses with solid side shields, and masks or chin-length face shields are required when splashes or sprays pose a hazard. Extensive covering such as gowns, aprons, surgical caps, hoods, and shoe covers or boots are required when gross

contamination is expected.

Employees must remove PPCE before leaving the work area or when it becomes contaminated. Used PPCE must be placed in designated containers for storage, decontamination, or disposal.

If an employee's skin or mucous membranes come into contact with blood, he or she is to wash with soap and

IMPLEMENTATION DATES (REVISED)

March 27, 1992	Regulations become effective.
May 26, 1992	Written exposure control plan must be completed.
June 24, 1992	Employee training must be completed; information and recordkeeping systems in place.
July 27, 1992	Engineering, work practice controls, personal protective equipment, housekeeping procedures, provisions covering HIV/HBV research labs and post-exposure programs in place; HBV vaccines administered; labels and signs displayed.

water and flush eyes with water as soon as feasible.

For copies of the standard contact Cathy Boland at the SCMA office. Direct questions to Don Gissendanner, SC Dept. of Labor, OSHA Division, in Columbia at 734-9632.

*Excerpted from a fact sheet entitled "Personal Protective Equipment Cuts Risk," published by the US Department of Labor, OSHA. □

ERRORS IN NEW CPT CODE BOOK

For your information, the new CPT-4 book has errors in the Table of Contents (page ix). The page number listed for Appendix-A Modifiers should be 563; for Appendix-B it should be 568; Appendix-C should be page 592; the instructions page should be 612 and the index page 613. **Make these corrections now to save confusion later.**

WORKERS' COMPENSATION

The SC Workers' Compensation Commission has jurisdiction where a physician has four or more employees. If you have three or fewer employees, you are not under their jurisdiction; however, you are not removed from liability if one of your employees is injured. In this case, the employee's only recourse is through civil court, rather than having the matter settled by the commission.

If you have less than four employees, you do not have to have coverage. The cost per hundred of payroll is currently \$0.34. It is suggested that you discuss this with your insurance agent to get the facts of your coverage and needs.

SUMMARY OF FEBRUARY 28 CLIA REGS (EFFECTIVE 9/1/92)

TYPE OF LAB:	PERFORM ONLY THE FOLLOWING WAIVERED TESTS.
TYPE OF TESTS:	Dipstick/tablet urinalysis; ovulation tests; urine pregnancy tests; non-automated erythrocyte sedimentation rate; hemoglobin (copper sulfate); fecal occult blood; spun micro-hematocrit; blood glucose testing using glucose monitoring devices cleared by the FDA specifically for home use.
FEE:	\$100 (for two years).
REQUIREMENTS:	1. Register and apply for certificate of waiver. 2. Affirm you follow good lab practice. 3. Will not routinely inspect, but must allow unannounced inspections.

TYPE OF LAB:	PERFORM MODERATE COMPLEXITY TESTS. NO HIGH COMPLEXITY TESTS. (most physician office labs)
TYPE OF TESTS:	75% of lab procedures (listed in federal regulations). Until HCFA performs an onsite inspection or verifies accreditation, a lab must obtain a registration certificate (\$100-\$600, depending on volume). In the future, after HCFA determines a lab's compliance, you will pay the following biennial fees for a testing certificate: \$300 (low volume, not more than 2,000 tests per year); up to \$3,115 (high volume, one million tests) OR you will pay \$100 plus the cost of a HCFA validation survey (\$42-\$156) for a certificate of accreditation if you are accredited by a private accreditation agency.
REQUIREMENTS:	1. MD may fulfill the role of lab director, clinical consultant and technical consultant. Most MDs who have been performing non-waivered tests in their offices during the past year will meet the requirement of one year's experience directing and supervising a lab. 2. Testing personnel must be at least a high school graduate and appropriately trained. 3. Have a written quality control procedure that monitors and evaluates each test methodology. 4. Follow manufacturer's instructions. 5. Perform calibration at least once every six months. 6. Perform QC with at least two levels of controls each day the test is used. 7. Document all of the above. 8. Beginning in 1993, participate in approved proficiency testing program. 9. Your lab will be inspected within the first two years you register with DHHS. 10. Some of the above rules may change after the first two years.

TYPE OF LAB:	HIGH COMPLEXITY
TYPE OF TEST	All procedures in clinical cytogenetics, histopathology, histocompatibility, and cytology. Other procedures are listed in the regulations. Any test not listed in the regulations is considered high complexity until the final list in September.
FEE:	Same as moderate complexity.
REQUIREMENTS:	Lab Director must be MD or DO (Board certified in pathology or have training/experience in supervising such tests), a PhD, or qualified under former regulations. Training and experience requirements are higher and more specialized, depending on types of tests. Physicians need two years' experience in supervising high complexity tests or one year of lab training in residency. The major differences between moderate and high complexity testing concern quality control and personnel standards. Labs performing high complexity testing must meet the QC requirements by September 1, 1992 whereas some QC standards for moderate complexity labs are being implemented in stages.

FEDERAL REGULATION OF PHYSICIAN OFFICE LABS: CLIA

Final regulations governing regulation of physician office labs were published February 28, 1992. Please note that these regulations apply to **ALL** physician office labs. These **DO NOT ONLY** apply to Medicare or Medicaid patients. You should be contacted by HCFA if you received and completed the survey mailed to you last November. If not, you can contact HCFA CLIA Lab Inquiry, PO Box 26687, Baltimore, MD 21207-0487.

Effective **April 1, 1992**, HCFA may begin collecting fees. Effective **September 1, 1992**, quality standards will be in effect. Physician office labs must adhere to manufacturer's current instructions and meet other interim quality requirements such as those listed in the box on the previous page. A complete list of tests will be published by category in **September, 1992**.

Effective **February 28, 1993**, if the physician does not have one year of experience in operating a lab (most practicing MDs satisfy this requirement), he or she must have earned 20 hours CME in lab practice. Effective **January 1, 1994**, moderate complexity physician office labs must be enrolled in a proficiency testing program.

SANCTIONS: Newly regulated labs will not have sanctions imposed for unsuccessful proficiency testing during your first inspection cycle. For other requirements, enforcement may begin through inspections starting in September, 1992. HCFA will not impose sanctions during the first cycle of inspections unless the lab's deficiencies pose immediate jeopardy. Eventual sanctions include civil monetary penalties of up to \$10,000 per violation or per day of non-compliance. HCFA may also suspend all or part of Medicare or Medicaid payment.

At the SCMA's April and May workshops on OSHA, we will present a brief overview of CLIA. At this time, you should decide whether you will continue all the tests you currently perform in your office or whether you will send some lab work out, thereby becoming a "waivered" lab instead of a "moderate complexity" lab.

The information contained in this newsletter is a summary. In order to comply with this law, your office needs more detailed information. SCMA members may call Cathy Boland at SCMA Headquarters for a copy of the regulations. Please direct questions to Barbara Whittaker at the SCMA. □

VACCINE INFORMATION PAMPHLETS (VIPs)

The US Public Health Service rule mandating use of Vaccine Information Pamphlets (VIPs) or an equivalent by all healthcare providers who administer seven common vaccines becomes effective April 15. An equivalent may be used only if it contains all of the information in the required pamphlet. A VIP or its equivalent must be given to each patient or adult receiving the vaccine. Separate VIPs are available for DTP or its combination of components, polio, and MMR or its components.

In addition, if you are using vaccines purchased through government contract (DHEC vaccine for Medicaid and indigent patients), a **signature of consent** is required before administering the vaccine. Vaccine purchased with private money may be administered without a signature

of consent; however, the American Academy of Pediatrics has recommended to its members that a signature of consent be obtained, regardless of the source of funds for the vaccine.

In order to assist SC physicians in implementing this law, DHEC will make VIPs available, through its county health departments, to private physicians or to private providers without cost for six months to a year, depending on how long the supply lasts. You must, however, request the VIPs and arrange to pick them up at your local county health department.

For additional information, call DHEC Division of Immunization in Columbia at 737-4160. □

LEGISLATIVE UPDATE

This is a mid-session report of the 1992 Legislative Update which includes the status of some of the bills being considered in the 1992 session of the General Assembly. Among the legislative proposals was a proviso to the State Appropriations Bill that would have imposed a \$220 increase in the physician licensure fee to help subsidize the budget shortfall in the state Medicaid program. The SCMA has been successful thus far in communicating its strong opposition to taxing a group of providers to help subsidize a state welfare program. The SCMA would like to thank physicians across the state for their efforts in contacting legislators in opposition to this proposal.

HEALTH SERVICES COST REVIEW COMMISSION ACT

H.4244

Rep. Billy Houck, MD

WITHDRAWN

This bill establishes the State Health Services Cost Review Commission which would review and set rates for inpatient procedures for physicians and hospitals.

STATUS: Representative Billy Houck, MD, recalled this bill out of subcommittee and asked that the 3M Committee table the bill. The bill was tabled; therefore, the bill is dead for this session.

NOTIFICATION FOR FILING CLAIMS

H.3040

Rep. Lucille Whipper

PASSED

H.3040 has been enacted into law which would require that all licensed healthcare providers post notice of their policies and procedures in regard to filing health insurance claims. The notice may take the form of the patient's information card, or be clearly posted in all patient waiting areas of the provider's place of business. The bill also requires that health insurance companies accept the standardized HCFA 1500 claim form. Debtors must be notified by mail 20 days before submitting a debt to a credit bureau or credit reporting agency.

STATUS: Effective upon signature by the governor.

DURABLE POWER OF ATTORNEY

S. 541

Senator Isadore Lourie

PASSED

S. 541 would create a statutory form for durable power of attorney for health care.

STATUS: Bill has passed both Houses and is awaiting the governor's signature.

WORKERS' COMP LEGISLATION

H.4559

Rep. Harrelson

PENDING

H.4559 includes employee's choice of physician and chiropractic coverage.

STATUS: Bill was just introduced and has been sent to Labor, Commerce and Industry Committee. This legislation has been introduced before and always faces stiff opposition.

EMERGENCY REFILL OF PRESCRIPTIONS

S.1138

Sen. Giese

PENDING

S.1138 specifies that a pharmacist who receives a request for a prescription refill and is unable to obtain refill authorization from the prescriber may dispense a one-time emergency refill of up to a 72-hour supply of the prescribed medication. There are restrictions which apply.

STATUS: Bill has passed out of Senate Medical Affairs and is currently on the Senate calendar.

FDA ASKS FOR ALERT ON BJORK-SHILEY HEART VALVES

The FDA has asked Shiley, Inc., maker of Bjork-Shiley heart valves, to notify patients and physicians that risk of fracture for some sizes of these valves may be higher than previously thought.

According to the FDA, the fracture rate for the large sizes of the 60-degree Shiley (C-C) valve is now thought to be as much as five times higher than previously estimated. Valve fracture is often fatal. The FDA believes the risk of fracture of these large valves over an eight-year period when implanted to substitute for the heart's mitral valve may be high enough for doctors and patients to consider replacing currently intact valves in some individuals.

The risk of fracture depends on the age of the patient, valve size and valve position. The rate may be as high as 0.8 percent per year for people under 50. *Which patients should now have their heart valve replaced is a decision that should be made on a case by case basis by physicians based on the new fracture figures and the patient's medical status, lifestyle and wishes.* □

I.C. SYSTEM COLLECTION SERVICES

Today, more than ever, debt collection has become one of the medical profession's biggest problems. Because collection is usually a frustrating, time-consuming process, we wholeheartedly recommend the collection services of I. C. System.

I. C. System has several new debt collection programs available that are uniquely suited to our membership. In fact, I. C. System offers the most comprehensive range of collection programs in the industry. This nationally recognized company is professional, efficient and thorough.

If you would like to put I. C. System to work for you, call 1-800-325-6884 for details. □

CAPSULES

John B. McGinty, MD, Charleston, has been elected to the board of directors of the American Academy of Orthopaedic Surgeons.

THE NATIONAL BROWN BAG MEDICINE REVIEW PROGRAM

The National Brown Bag Medicine Review Program, developed by the National Council on Patient Information and Education in partnership with the U. S. Administration on Aging, is designed to encourage community-based organizations and individual healthcare providers to conduct medicine review for older consumers — those most at risk from the consequences of multiple medicine use. The program is one of the first responses to the Year 2000 Health Objectives for the Nation. The DHHS report recommends that primary healthcare providers routinely review all the prescription and nonprescription medicines their elderly patients are taking.

Everything you need to organize and conduct an initial medicine review for up to 50 patients is included in the "Brown Bag Medicine Review Starter Kit." One kit contains a "how to" manual, 50 pre-printed brown bags, 50 patient brochures, two posters, patient consent form and medication review form, publicity materials, camera-ready forms for reprinting brochures/poster, and reorder form. Plan to start your review program during Older Americans Month in May. *A starter kit is \$45.00 and may be ordered from NCPIC Brown Bag Kit, Suite 810, 666 Eleventh Street, NW, Washington, DC 20001.* The Sumter County Medical Society and auxiliary conducted a similar program in our state. □

SCMA AWARDS/HONORS

Stoney A. Abercrombie, MD, a family physician from Greenwood, has been selected as the recipient of the annual Physicians' Award for Community Service. The award will be presented during the President's Banquet at the SCMA Annual Meeting later this month.

Arthur J. Crumbley, MD, MUSC, Charleston, is the winner of the Thomas A. and Shirley W. Roe Award for the best article by an institution-based physician published in *The Journal*.

Greenville County Medical Society has been chosen to receive the annual Service to the Community Award for county medical societies. Greenville was selected for its Doctor-Lawyer Substance Abuse Education Teams project. □

UPCOMING PROGRAMS/CONFERENCES

AMA Financing and Practice Services, Inc. and AMA Investment Advisors, Inc. are offering more than 100 workshops between now and the end of June on a variety of practice and financial topics in locations across the country.

Among the offerings are seminars on Starting Your Practice, Joining a Partnership or Group Practice, Successful Money Management, Financial Strategies for Successful Retirement and Gearing Up for Retirement (can be paired for even greater savings), Insurance Processing and Coding, ICD-9 Coding for Doctors' Offices, CPT Codings: Beyond the Basics, Medical Collections Management, and The Business Side of Medicine.

Among locations are Chicago, New York, Seattle, Houston, Atlanta, Boston, San Francisco, Phoenix, Raleigh, St. Louis, Traverse City, Tampa, Pinehurst, Santa Fe, San Diego, Denver, Kansas City, Detroit, Minneapolis, New Orleans and others. The retirement workshop will be in Hilton Head Island on August 6 and 7.

Anyone interested may call 1-800-366-6968 to learn which workshops are available in which locations. Attendees can also qualify for special airfares and hotel rates at most locations. Fees for AMA members range from

\$140 to \$275 for most programs. Non-members pay from \$160 to \$345 for the same seminars.

The first annual conference of the Medical Speakers Association, "The Physician as Communicator," will be held June 5-7 at the Omni Hotel in Charleston, SC. The two-day program will include discussions of issues facing physician speakers, as well as instruction and advice on improving presentation skills. Speakers include James David, MD, former AMA president, and Neil Shulman, MD, "Doc Hollywood." For more information, contact the Medical Speakers Association at (919) 361-2940.

The AMA Hospital Medical Staff Section will hold its 19th Assembly Meeting June 18-22, 1992 at the Chicago Marriott Hotel in Chicago, Illinois. The HMSS Assembly provides medical staffs with a unique opportunity to discuss and participate in the policymaking process of the AMA. In addition to the Assembly Meeting there will be two educational programs from which you may choose one to attend: Option 1: Medical Staff Bylaws: Principles and Practices or Option 2: Outcomes Management: A Medical Staff Issue.

For further information call (312) 464-4754 or 464-4761. ☐

SCMA WORKSHOP: OSHA REQUIREMENTS FOR PHYSICIANS' OFFICES AND OVERVIEW OF NEW CLIA REGULATIONS

Responding to numerous requests, the SCMA will offer a comprehensive workshop on existing and new OSHA requirements as well as an overview of CLIA. Workshop attendees will receive detailed information on OSHA including a 70-page notebook which contains a model exposure control plan and other information needed to comply; information from the SC Department of Labor (the enforcement agency for OSHA); and an introduction to CLIA. Lunch is included. To register please complete the form below and return it to the SCMA with your payment.



Please indicate which workshop and location you plan to attend:

- () **GREENVILLE:** 9:00-4:00 pm, Wednesday, May 6, Hilton (exit 39, 385 at Heywood Road)
() **COLUMBIA:** 9:00-4:00 pm, Thursday, May 7, Sheraton (Bush River Road and I-20)
() **CHARLESTON:** 9:00-4:00 pm, Wednesday, May 13, Marriott, I-26, North Charleston
(from west, exit 213-B; from east, exit 213)

Name _____

Address _____

City/State/Zip _____ Phone _____

- () Check enclosed (\$120 per SCMA member or member's staff; \$220 per non-member or staff)

TRUSTEE REPORTS

TRUSTEE, FIRST MEDICAL DISTRICT

It has been an honor and a pleasure to serve as the rural trustee from District 1 for the 1991-92 year. I have participated in board meetings and attended the Annual Meeting in Charleston.

This has been a most challenging year as your rural trustee in District 1. Walterboro, Colleton County and the surrounding areas have had an exceptional year in recruiting new physicians. I have had the honor and pleasure of talking to these physicians and getting them interested in the SCMA and joining to make our organization stronger.

I look forward to continuing to serve as your Trustee from District 1.

John B. Johnston, MD
First Medical District

TRUSTEE, SECOND MEDICAL DISTRICT

My second year as an SCMA Board member has been eventful and educational. The endeavors of the SCMA are many and varied — from mounting a campaign which substantially influenced the interpretation and implementation by HCFA of the RBRVS legislation, to adopting a practical policy regarding HIV testing for physicians. These and other activities further convinced me that only through organized medicine can we expect to have a substantive influence on the many and ever-changing problems our profession constantly faces. I urge each of you to join and participate in your local, state and national organizations.

I believe in the near future we will be seeing some drastic changes in the healthcare industry. The public's concern over ever-rising healthcare costs are genuine and warranted and will certainly be heightened

during this election year. The question of how to reduce costs but maintain quality has no quick or easy answer. Only through the input and cooperation of all segments of the industry, including physicians, hospitals, third-party payers, the general public and others, can we expect effective answers. Any proposed solution which unfairly penalizes or rewards any one of these segments will not be viable.

Again this year I attended the SCMA Leadership Conference held at the Marriott Hotel in Columbia. The program was, as usual, excellent and should have been better attended. This conference is very informative and provocative and I feel it is well worth any physician missing a day of work to attend. An intriguing presentation was given by Dr. Donald Saunders regarding the increasing numbers of physicians he has noted who are over-stressed and unhappy with their work and their life in general. He is planning to organize weekend retreats to address and hopefully lessen the problem. I think this is a very worthwhile project and encourage those of us in need to attend.

The leadership of the SCMA continues to be of the highest quality. Dr. Chris Hawk, the other officers of the SCMA and our AMA delegates are all intelligent, well-informed and articulate representatives. We all owe them our thanks for their willingness to serve. Let me again remind you that our Executive Vice President, Mr. Bill Mahon, and his excellent staff are available to help us with our problems. I encourage you to avail yourself of their expertise.

I want to thank you for allowing me to serve as your board member and I look forward to continuing my learning process to better serve you in the future.

Bryan L. Walker, M.D.
Second Medical District

TRUSTEE, FOURTH MEDICAL DISTRICT

It is a pleasure that I am able to report to this body again this year. During the past year since our last meeting, I have attended all of the Board of Trustees meetings of the SCMA except one, and I have been an active participant in discussing those things which are relative to our association. I attended the board retreat where a great number of issues of importance were discussed. As the trustee for the Physicians' Advocacy and Assistance Committee, I attended most of the meetings of that group and have heard their problems and represented their point of view on the issues which come before the Board of Trustees from that committee.

I also served as the chairman of the SCMA HMSS group, and I would like to report that I am continually disappointed by the participation of the hospitals' medical staffs in this state at the state and national level of the HMSS. I have asked the Association of Hospital Medical Directors to encourage the larger hospitals, at least in this state, to send representatives, but at the last two meetings of the AMA HMSS I have been the only representative from the state of South Carolina. It is my opinion that the hospital medical staffs of this state are ignoring a great opportunity not only to learn about national medical care problems, including all of the

plans espoused for national health care, but also to voice opinions on a great variety of subjects which are of primary interest to hospital medical staffs.

In conclusion, it has been my pleasure to serve as your representative from the 4th District to the Board of Trustees as well as the State Chairman for the HMSS.

Jerry R. Powell, MD

Trustee, Fourth Medical District

TRUSTEE, EIGHTH MEDICAL DISTRICT

The United States has the best health care in the world. We are going through changes due to cost containment that may make our health care like other countries - less expensive, less available, and less quality. Are we going to allow this to happen?

1992 is an election year. There is much talk of high medical costs and national health insurance with very little talk of quality of care. We must be in the forefront of creating and promoting solutions to high quality health care at a reasonable cost.

Encourage non-members of organized medicine to join and participate. Use your influence to have everyone vote for the quality of health care that America deserves.

Dallas W. Lovelace, III, MD

Trustee, Eighth Medical District

COMMITTEE REPORTS

ADVISORY COMMITTEE TO THE SC DEPARTMENT OF VOCATIONAL REHABILITATION

The South Carolina Medical Association Advisory Committee to Vocational Rehabilitation met on Wednesday, February 12, 1992, at the S.C. Rehabilitation Department Center, West Columbia. Dr. Ben N. Miller, Chairman, presided. Members of the committee present were: Dr. William P. Kay, Jr., Belton; Dr. Robert C. Lindemann, Rock Hill; Dr. Woodrow Long, Jr., Greenville; Dr. James E. Padgett, Jr., Columbia, representing DHEC; Dr. Patricia Sadler, Clinton; Dr. Braxton B. Wannamaker, Charleston; and Dr. James F. White, Columbia. Vocational Rehabilitation was represented by Mr. Joe S. Dusenbury, Commissioner; Mr. Preston Coleman, Assistant Commissioner/Administrative Services; Mr. Jim House, Client Services Consultant; Mr. Pete Howell, Assistant Commissioner; Dr. Paul G. Knight, Assistant Commissioner, Client Services; Mr. David Lever, Assistant Commissioner Comprehensive Programs; Ms. Lucerne W. Melton, Project Supervisor; Mr. Alan Frederick, Physical Therapy Chief; Mr. Greg McGrew, Rehabilitation Engineering Associate; Mr. Tony Langton, Project Director; Mr. Rick Vandiver, Director Disability Determination Division; Mr. Wayne Nance, Quality Assurance Analyst; Mr. David King, Disability Determination Manager; and Dr. Jim Weston, Physician, Disability Determination Division.

Dr. Ben Miller welcomed the committee members and expressed appreciation for their presence. Dr. Miller stated that when Vocational Rehabilitation began providing physical restoration services, it became necessary to have a medical advisory committee. Originally, the committee was selected by the agency, but later Vocational Rehabilitation nominated their own committee to serve as a part of the committee

system of the South Carolina Medical Association.

Mr. Joe Dusenbury, Commissioner, was introduced and he stated that even though some of the committee members had seen the facilities before, a lot had been added. He said he thought he knew a great deal about rehabilitation but the last few years have been extremely exciting and there are many new things that can be done for the severely disabled of our state. Vocational Rehabilitation is able to rehabilitate people with physical and mental disabilities today that could not be served before. He pointed out that Vocational Rehabilitation was not successful with everyone, but a lot has been accomplished. It was pointed out that the state budget has been cut another \$150,000, but fortunately, the federal funding had been increased by nine percent. Vocational Rehabilitation has had a great deal of success in that 60 percent of those persons rehabilitated would be considered severely disabled. This percentage has remained constant for the past several years. At present, plans are to have four regional centers in the state of South Carolina where there will be experts on assistive technology. The first center will be Roger C. Peace in Greenville; the second center will be in Columbia (Easter Seals is hoping they will be able to work with this center); the third center will be established at the College of Charleston; and the fourth center will be developed in the Florence area. South Carolina continues to outrank other states in the number of people served and rehabilitated. The number served in South Carolina is 240 per 100,000 population and the national average is 80. This has been accomplished by the help and hard work of many people.

Mr. Rick Vandiver, Director of Disability Determination Division, was introduced. He stated that there had been some new happenings in the Disability Program that he felt the committee should know about. He introduced Mr. David King, Disability

Determination Manager, to give an update. Mr. King stated that the department also needs funding, but at this point, there was a lack of funding to process the work load the Disability Unit is facing. He pointed out that he wanted the medical community to understand what is going on in the program. Last year, the Disability Unit was projected to process approximately 36,000 claims and was able to produce over 40,200 cases but still had many cases that were not put into process during the year. This was a result of a lack of funds and personnel to carry out the task. This results in claims not being processed as quickly as the department would like. This year, the projected figure of 47,250 disability claims are to be processed and this does not address the cases that were not processed from the previous year. There is hope that additional funding will be available which will help move the cases through the claim process in a timely manner. The department is financed on a cost per case basis. There will be an increase in volume of requests for records, information and medical source statements that the physician will be asked to provide regarding what impairments the clients suffer from and what limitations are imposed upon them. The department is funded to purchase approximately 35 percent of the medical services. The Social Security Administration policy states that, whenever possible, the department will purchase consultant examinations from the treating physician. This will result in an increase of requests for medical information from the medical community.

It was pointed out that a disabled child won a court case against the Social Security Administration stating that the way a child's case was evaluated needed to be changed. As a result of this, the department is having to go back to 1980 and re-examine or evaluate all children's cases through 1991 which will result in approximately 5,000 cases to be reviewed.

Mr. David Lever, Commissioner/Comprehensive Programs, stated that the department

had looked forward to the committee coming to the center for a year. He pointed out that the facilities and programs that are on campus were developed over the past 15 years. One building was remodeled about two years ago and added 12 beds to the existing 18 beds, making this a 30-bed residential vocational evaluation facility. One facility serves as port of entry for all other programs on campus. There are three major programs in this facility. One is the basic vocational evaluation. The clients are referred to the program from one of the 19 area offices across the state when the clients have a severe physical disability and need a comprehensive vocational evaluation that cannot be provided in the community. The second is the Pain Management Program where clients are referred who have experienced chronic pain and have not been able to work. They are brought into this facility and involved in a program that is designed to teach them ways to manage the pain and return to employment.

The third and newest program is the Industrial Rehabilitation Program. This can be compared with the Work Hardening Program that exists in the private sector. The Work Hardening component is a major service in the Industrial Rehabilitation Program. In addition to Work Hardening, psychological services as well as vocational evaluations are available. In addition, there is a Muscular Development Center. There are four service components in this Center: physical therapy, aquatic therapy, exercise physiology, and recreation therapy. There is also a Vocational Training Center which has an 18-bed dormitory. In this facility, individuals are trained in computer programming, computer assisted drafting, and automated office occupations. The department has provided these services for about seven years. This program has been extremely successful in placing the graduates directly on the job. It was also pointed out that the department has a Rehabilitation Engineer on staff and that over the years, the Engineering Program has been developed.

When a field counselor has a client who needs modifications to his/her home or on the job site or a seating modification, the case is reviewed with the Rehabilitation Engineer and he in turn makes all arrangements for an onsite visit. There is a fabrication workshop where the recommendations from the Rehabilitation Engineer can be done. However, when possible, assistive devices are purchased and modifications are made to suit the individual, but there are times when the devices are made in the workshop. To our knowledge, S.C. Vocational Rehabilitation is the only facility in the United States that can provide this type service at this time.

At this point, a video was shown to the members highlighting some of the work that is done in the facilities. After the film, members were given an opportunity to comment and ask questions. All stated that the video was of much interest and that they were impressed with what was being offered to the handicapped citizens in South Carolina.

Mr. Lever gave information on three different cases where clients were helped. A woman who had Muscular Dystrophy with ten years of clerical expedience was experiencing problems on the job as well as problems with her own self-concept. Through vocational evaluation, psychological services, muscular development and job readiness, along with some computer training to update her skills and training in automated accounting and word processing, she has been able to secure and hold a position in the finance department at Midlands Technical College for more than a year. Another client, at age 23, had Guillain-Barre and was wheelchair dependent with minimal leg function and sufficient hand function. The client was placed in the Muscular Development Center and with the help of physical therapy, aquatic therapy, muscular development and his determination, he was able to learn to walk without the assistance of any device. The third, a 35-year old man, was in an auto accident which resulted in his

becoming a high level quad. The client owned a nursery and needed modifications at the work site as well as at home. Vocational Rehabilitation made recommendations for a ramp to his home and work area. A six-wheel vehicle with some modifications made it possible for him to continue to supervise the work crew and continue to operate a successful business.

Ben N. Miller, M.D.,
Chairman

THE AGING AND MEDICARE COMMITTEE

The SCMA continues to actively address Medicare issues through liaison with the local carrier, Blue Cross and Blue Shield of South Carolina, and at the federal level through communication with our Congressional Delegation and the AMA.

Implementation of the RBRVS appears to have proceeded quite smoothly thus far in our state, especially in light of the short implementation time. There are still several issues requiring clarification from the Health Care Financing Administration (HCFA) such as billing of critical care and observation care. In addition, HCFA has been very slow in issuing instructions for the new HCFA 1500 claim form. Unfortunately, there remains a lack of examples of proper coding under the new CPT coding system, and it is anticipated that auditing later in the year will indicate problems with coding. The carrier and the SCMA did conduct coding workshops to assist physicians and our staffs with the new codes.

Legislative action by Congress is needed to address the lack of reimbursement for interpretations of EKGs and the unfair reduction in reimbursement for physicians in their first four years of practice. Of course we will carefully monitor the budget discussions and how they will impact the Medicare program. Of special interest will be the impact of the Medicare volume indicators, which will reduce reimbursement if the

volume of Medicare services exceeds a predicted amount.

Our committee met with representatives of Medicare and the Commission on Aging in August. In addition, the SCMA staff is available to assist you and your staff with questions regarding Medicare. Furthermore, the SCMA's delegates to the American Medical Association have participated actively in the debate about the Medicare program and key contacts have met with our Congressional Delegation. Both the SCMA and various specialty societies have maintained close contact with Vasa Cate, MD, Medical Director of the Medicare program in South Carolina, and Tommy Walters, Medicare Ombudsman for physicians. We are fortunate to have leadership at the carrier which is willing to work with us in a most helpful way, and we greatly appreciate this relationship.

James M. Hayes, MD
Chairman

THE CONSTITUTION AND BYLAWS COMMITTEE

The Constitution and Bylaws Committee recommends to the House of Delegates that the following amendments to the bylaws be considered for adoption.

The Board of Trustees is recommending that the terms of the AMA delegates and alternate delegates be limited in order to provide the opportunity for more members of the SCMA to participate in AMA activities. Section 2.231 is recommended as an addition to the bylaws to establish the terms as recommended by the board. Provision is made to allow an extended term if it is to the benefit of the SCMA.

2.23 AMA DELEGATES AND ALTERNATES. The House of Delegates shall elect representatives to the House of Delegates of the American Medical Association in accordance with the Constitution and Bylaws of that body.

In order to stagger the terms of the Delegates to the American Medical Association, at least one (1) delegate and one (1) alternate delegate shall be elected each year to serve for two (2) terms.

2.231 TERMS OF AMA DELEGATES AND ALTERNATES. AMA delegates and alternates shall be elected to serve no more than four two-year terms. A member who serves as both a delegate and an alternate shall be limited to a maximum of five two-year terms. The number of terms may be extended upon the recommendation of the Board of Trustees and with the consent of the House of Delegates when such extension would be to the benefit of the SCMA. The Board of Trustees must present its recommendation for an extended term at the Annual Meeting prior to the year that the election for the extended term would take place.

There has been a problem with delegates to the SCMA serving in more than one seat in the past. For example, a delegate may represent his component county society and his component specialty society concurrently in the House of Delegates. This committee believes that if a component society is to be represented it should send a delegate to serve in that seat. We therefore recommend the following revision:

2.211 A member of the House of Delegates may not represent more than one entity in the House of Delegates. A delegate is entitled to cast only one vote on questions before the House of Delegates.

The Medical Student Section has not elected a Chairman and Vice Chairman for the past few years and its house seats are allocated this way. In order to provide the students from both schools representation in the House of Delegates the following revision is recommended.

COMMITTEE REPORTS

2.220 I. A student from the Medical University of South Carolina and a student from the University of South Carolina School of Medicine who are members in good standing of the ~~Chairman and Vice Chairman of the governing Council of~~ SCMA MSS (Medical Student Section);

If the previous change is approved it will be necessary to revise the following section.

1.441 RIGHTS AND PRIVILEGES.

Student members shall not have the right to vote or hold office. EXCEPTION: ~~The Chairman and Vice Chairman of the~~ Members of the SCMA-MSS, who are members of the House of Delegates may vote. Student members may be allowed to be full voting members of committees.

The name of the Committee on Perinatal and Maternal Health has been changed to the Maternal, Infant and Child Health Committee.

3.9211 ~~COMMITTEE ON PERINATAL AND MATERNAL HEALTH.~~ MATERNAL INFANT AND CHILD HEALTH COMMITTEE. Terms of membership shall be arranged so that nine (9) members shall complete their terms of service each year

3.951 PURPOSE. To ensure that high professional standards are maintained by all physicians practicing in the State of South Carolina, special committees relating to Peer Review will be established. At present, these committees include, but will not be limited to the following: the SCMA Mediation Committee, the SCMA Physicians Advocacy and Assistance Committee, the SCMA Peer Review Committee, and the SCMA ~~Committee on Perinatal and Maternal Health~~ Maternal, Infant, and Child Health Committee.

The requirement that an SCMA member must also be a member of the local county

medical society has become unenforceable due to the large number of physicians now practicing in the state. Currently the SCMA relies on physicians indicating on the dues bill that they belong to the county society and this system when audited has proven to be inaccurate. It is recommended that the bylaws be revised to eliminate the requirement for component local medical society membership as a prerequisite for SCMA membership. Membership would still be required in the component local medical society for a regular member to be recommended for Honorary and Disabled membership and to serve as a delegate.

1.41 REGULAR MEMBERS. Regular members shall ~~be members of component local medical societies and~~ fulfill the following requirements: A) possess the degree of Doctor of Medicine or Osteopathy, or its equivalent; and B) possess a license to practice medicine or surgery in South Carolina.

1.411 ADMISSION. Any physician who ~~is is a member in good standing of a component local medical society and who~~ has paid annual dues to the Association shall be a member of the Association.

1.332 MEMBERSHIP. ~~Members of the component unit of Resident Physicians must hold concurrent membership with the Association. In those component local medical societies without provision for active membership for Resident Physicians at reduced dues, Resident Physicians will be permitted direct membership in the Association and its component unit of Resident Physicians until such time as active membership in the component medical society is available.~~

William H. Hester, MD
Chairman

THE CONTINUING MEDICAL EDUCATION COMMITTEE

We are pleased to report that, since the last House of Delegates meeting, the Review and Recognition Committee of the Accreditation Council for Continuing Medical Education awarded the SCMA CME Committee continued recognition for the maximum period of four years. Thus the SCMA will continue to act as the intrastate accreditation body for South Carolina organizations and institutions.

Accreditation activities have increased over the past year, with several hospitals due for reaccreditation, and site visits to review new applications for accreditation as well. Two new institutions, C. M. Tucker Human Resources Center in Columbia, and Self Memorial Hospital in Greenwood, were accredited for a two-year period, bringing the total SCMA accredited organizations/institutions to 12.

The SCMA Accreditation Manual has been updated and published in a new format to include new guidelines on gifts to physicians from industry and guidelines for commercial support of CME. It is expected that these new directives will change CME activities, with the sponsoring institutions having more control over speaker choice and material content. Industry support, it has been suggested, should change to outright grants to CME sponsoring institutions. It is clear we are in a transitional period.

The CME Committee has worked very hard in preparing the 1992 Scientific Program. The Chairman would like to thank all the committee members for their hard work in preparing the CME Program and in assisting in accreditation surveys.

Gerard C. Jebaily, MD
Chairman

THE ENVIRONMENTAL PRESERVATION AND PROTECTION COMMITTEE

The Environmental Preservation and Protection Committee was active during 1991 and 1992, holding various meetings to discuss timely issues of environmental concern to physicians.

In February 1991, the committee invited Craig Kennedy of the South Carolina Land Resources Commission to discuss environmental issues raised by gold mining operations in South Carolina. The committee was educated about various licensing regulations related to such an operation and about the role of both the Land Resources Agency and DHEC in issuing licenses to operate a gold mine. Compliance with environmental safety regulations was also discussed.

In August 1991, the committee invited Stanley Schumann, MD, of MUSC, to discuss his research related to the safety of the United States food supply, especially in light of recent concerns raised about environmental contamination of our food supply through various farming and food handling practices. Dr. Schumann provided the committee with various data relating to his belief that the overall quality of U.S. food is excellent.

In December, 1991, the committee was educated about the quality of the South Carolina water supply by Glenn Patterson of the United States Geologic Survey (USGS). Mr. Patterson discussed the role of the USGS in surveying water quality throughout South Carolina, how various projects along the South Carolina coast have impacted the quality of our water supply, and the importance of subterteranean water quality as an index to the quality of surface waters.

The committee continues to meet on a quarterly basis and feels it is forming the groundwork to be a respected resource of environmental information for South Carolina physicians.

Edward W. Catalano, MD, Chairman

THE MATERNAL, INFANT AND CHILD HEALTH COMMITTEE

Our committee continues to provide input to DHEC, the Health and Human Services Finance Commission, the Maternal, Infant and Child Health Council in the Governor's Office and the SCMA Board of Trustees on issues pertaining to maternal, infant and child health.

Of special concern to us again this year is the substance abusing pregnant woman. The results of the statewide prevalence study indicate that one in four infants born in our state each year are born to women who use alcohol, illegal drugs or non-prescribed prescription medications while pregnant. Representatives of our committee served on a South Carolina Hospital Association Task Force which developed guidelines for drug screening of pregnant women, including at the time of delivery, and for screening of newborns. These guidelines also include suggestions of when to report to the Department of Child Protective Services at the Department of Social Services.

Our committee plans further work on this important need, including discussions of ways to identify these women earlier in their pregnancy.

The committee continued to review all maternal deaths which are reported to us by DHEC. Our review indicated that DHEC had incorrectly classified four deaths as maternal deaths, and we have notified the Department of Vital Statistics of this finding. Hopefully, recalculating our rate based on this information, the maternal death rate for our state will no longer exceed the U.S. rate.

Our other major concern during the past year has been the lack of adequate funding for the Medicaid program. Our committee requested that the SCMA Board of Trustees work with the Health and Human Services Finance Commission and the Legislature in order to obtain adequate funding for Medicaid.

Ralph F. Principe, MD, B. C. Pendarvis, Jr., MD, Co-Chairmen

THE MEDIATION COMMITTEE

The Mediation Committee of the SCMA did not meet between April, 1991 and March, 1992 due to an unusually low number of complaints concerning members of the South Carolina Medical Association that were not handled by local society grievance committees.

Twenty-five complaints were received by the committee between April, 1991 and April, 1992. Of this number, eight were referred to the appropriate local medical society where the complaints were ably handled to conclusion. Two complaints concerned physicians who were not members of the SCMA; (the committee has no jurisdiction in these cases, but urged the physicians to join SCMA. If they join or consent to review, the committee proceeds with the case.)

The remainder of the complaints, most of which concerned access to medical records, were handled by SCMA staff.

I wish to thank the committee members and SCMA staff for their support this year.

Albert G. LeRoy, Jr., MD
Chairman

THE MEDICAL ASPECTS OF SPORTS COMMITTEE

The Committee of the Medical Aspects of Sports for the SCMA met quarterly in 1991. Throughout the year, several programs were instituted.

In conjunction with the South Carolina High School League, the insurance program, as provided by the league, was supported and given input in order to create broader coverage for all high school athletes.

The pre-participation exam which has been currently under way for two years was further strengthened and initiation of a program involving injury recording was begun.

In conjunction with the Governor's Council on Physical Fitness, a program to follow up on a resolution passed at the 1991 Annual Meeting regarding physical education in

schools was begun. It was the recommendation of Marion Burton, MD, that this information be transmitted and correspondence occur with the Board of Education. However, after several inquiries, it was felt that this channel would not be productive and that the best route would be through DHEC and its influence with the Governor's Council and their health education sub-unit.

The annual Sports Medical Symposium was held on April 27, 1991 with the South Carolina Chapter of the American Academy of Pediatrics. Speakers from the Medical University of South Carolina and physicians at large in South Carolina comprised a program which dealt with problems unique to children in sports. The program was well received and created a good liaison with the Academy of Pediatrics as well as the sports medicine community. At the Annual Meeting two resolutions were presented; one involving physical education in schools and the other involving healthcare curriculum.

A representative, Frederick Reed, MD, attended the North Carolina Committee on Medical Aspects of Sports meeting on October 11, 1991 in Asheville, N.C. and maintained a continued relationship with that organization to help strengthen the South Carolina unit.

A program was begun which involved in-services for coaches, trainers and school nurses utilizing the in-service training of the Department of Education for all of the high schools in the state. This program was quite successful though there was inadequate penetration in the Greenville and upstate area. By and large, feedback indicated that continuation of this program was warranted.

Plans were made for the upcoming 1992 Annual Meeting with a program centering on a recommendation presented by Dr. Thad Bell of Charleston in which he suggested that the area of fitness and sports for the middle-aged and average population be addressed. This will take the form of an introduction to the Healthy People 2000 initiative with speakers addressing issues involving general fitness as

it applies to improvement of health risks.

The committee will continue to work with the high school league, the Governor's Council on Physical Fitness, the Department of Education, and DHEC to further the programs instituted through this committee.

Frederick E. Reed, MD
Chairman

THE MEDICAL ETHICS COMMITTEE

The Medical Ethics Committee of the South Carolina Medical Association continues to be one of the association's most active committees. Our Ph.D. consultants, Douglas MacDonald, Albert Keller, Stuart Sprague, and Nora Bell, non-physician members of the committee, continue to provide important support to the committee.

The past year of the committee's work has consisted of lengthy discussions of the ethical implications of mandatory HIV testing for healthcare workers, resulting in an advisory document being transmitted to the SCMA Board of Trustees relating to the operation of the South Carolina Medical Care Foundation's HIV/HBV Safety Network.

The committee has also discussed the ethical implications of so-called "gag rules" which prohibit physicians in certain public health settings from discussing abortion.

In February 1992, the Ethics Committee held a retreat for three days at Hilton Head Island. The committee was joined by Douglas Rasmussen, Ph.D., of the philosophy faculty at St. John's University in New York City. The committee spent 18 hours over a three-day period discussing the philosophical realm of moral philosophy, the discipline which forms the basis for the various analytical systems used by bioethicists as they confront the ever increasing questions that the modern day practice of medicine brings.

The works of Aristotle, John Stuart Mill, Immanuel Kant, David Hume, Soren Kierkegaard, Tristan Englehardt, and others were discussed, using Beauchamp and

Childress's work, *Principles of Biomedical Ethics*, as a guide. The contribution of the philosopher consultants was invaluable during this exercise.

In the future, the committee will discuss the ethical implications of various national healthcare proposals, and will work to educate the public about the role of biomedical ethics in the provision of health care. The committee will also work to provide guidance to hospitals and local medical societies who wish to form their own medical ethics committee.

The members of the SCMA Medical Ethics Committee appreciate the support they have received from the SCMA Board of Trustees and input from various members of the SCMA who have raised suggestions for future discussions. The committee remains dedicated to applying the "Principles of Medical Ethics of the South Carolina Medical Association," adopted by the House of Delegates in 1988.

The committee feels its efforts represent the cutting edge of activities by state medical associations to consistently apply principles of biomedical ethics that are grounded in the highest traditions of moral philosophy. The committee welcomes input from all members of the SCMA.

Charles R. Duncan, Jr., MD
Chairman

THE MEMORIAL COMMITTEE

In communities across our state, voids have been created by the passing of distinguished physicians who kept their oaths and served humanity well. Their honor remains, however, in the appreciation and memories of grateful people whom they served in a self-giving way.

We, the members of the South Carolina Medical Association, join in adding our appreciation for these colleagues who now rest from their labors. We honor the contributions that they made in upholding the high standards of our profession with

integrity, proficiency and compassion; and we add our sympathy for loved ones and patients whose lives are most affected by these deaths. After their names have been read, we shall stand for a moment of silence out of respect for the following: Donald Bailey, MD, Myrtle Beach; Rufus H. Cain, Jr., MD, Dillon; F. L. Clark, MD, Lexington; Edward J. Dennis, III, MD, Columbia; Bruce Eames, MD, Greenville; James L. Fry, Jr., MD, Georgetown; William T. Hendrix, MD, Spartanburg; David L. Lee, Sr, MD, Florence; James H. Linder, MD, Bennettsville; James C. Montgomery, Sr., MD, Kingstree; Thomas A. Pitts, MD, West Columbia; Robert L. Ramseur, MD, Conway; Charles P. Ryan, Jr., MD, Ridgeland; J. Moultrie Townsend, MD, Charleston; George H. Widener, III, MD, Beaufort; and Thomas R. Wynne, MD, Greenville.

W. Rion Dixon, MD
Chairman

THE OCCUPATIONAL MEDICINE COMMITTEE

The SCMA Committee on Occupational Medicine held quarterly meetings during 1991. *The Schedule of Fees for Physicians and Surgeons for Services Rendered under the South Carolina Workers' Compensation Law* updates were completed and mailed in late April and August. Many hours were contributed to this effort by all members of the committee.

Physicians' fees which seemed inappropriate to the Medical Department of the Industrial Commission were reviewed at each meeting, and recommendations were made to the commission on an individual case basis.

Due to the new medical ethics law, the committee was not able to host a dinner meeting with the commission during the year. However, the commissioners are available to speak at any medical group meeting.

During 1991 the committee updated most of the 1991 CPT Codes. Several workshops were held around the state for insurance

clerks and insurance carriers to resolve problems with the new fee schedules. An ad hoc committee was appointed with members of the South Carolina Workers' Compensation Commission (SCWCC) and the SCMA regarding office surgical suites.

The committee reviewed and clarified the surgery guidelines for multiple surgical procedures performed at the same time.

The staff at the SCMA continues to collect a list of physicians willing to treat Workers' Compensation patients.

The SCWCC, in cooperation with the SCMA, will hold the 13th Annual Workers' Compensation Medical Seminar, June 12-14, 1992 at the Sheraton Charleston Hotel. I urge all physicians to attend this important meeting.

The Occupational Medicine Committee and the South Carolina Workers' Compensation Commission are always available to participate in a panel discussion during an SCMA Annual Meeting or to speak at county medical society meetings.

We are currently addressing the conversion to the 1992 E/M codes and anticipate having this completed by late spring or early summer '92. We ask that you continue to use the 1991 CPT codes and fee schedule until this conversion is complete.

In summary, 1991 was another busy year for the committee in fulfilling its role as liaison between the South Carolina Medical Association and the South Carolina Workers' Compensation Commission, as well as a resource group to the commission as it attempts to fairly administer the Workers' Compensation Law of the state of South Carolina.

I would like to thank all committee members, SCMA staff and SCWCC staff for their hard work this past year.

Marion F. McFarland, III, MD
Chairman

THE PHYSICIAN'S ADVOCACY AND ASSISTANCE COMMITTEE

The committee continues to be quite active. We continue to have a number of physicians under contract and receiving treatment.

The committee is gathering information for the State Board of Medical Examiners. This study will be sent to Mr. Stephen Seeling, Executive Director, for review of the licenses of impaired physicians to determine if the three-year probationary period can be reduced to a lesser amount of time.

The Board of Trustees approved an increase in the budget from the JUA. The committee is grateful for their continuing support.

The SCMA Auxiliary has been supportive by having a day-long workshop this past October in Columbia, for spouses of impaired physicians to discuss "Family Support." We appreciate the work and dedication of the SCMA Auxiliary.

The regional treatment teams continue to be very active and work with their peers as advocates. There are active Caduceus physician groups in Charleston, Greenville, Spartanburg, Florence and Columbia.

I wish to thank the Board of Trustees, the committee members, SCMA staff, and the JUA for their support and work this past year:

James Wells, MD
Chairman

THE PRIMARY CARE/ MEDICAID AND INDIGENT CARE COMMITTEE

With the recession, this past year has been a difficult one for the Medicaid budget. Increasing numbers of people are eligible for the program and at the same time there are limited state funds and new federal restrictions on funding. Although the Health and Human Services Finance Commission has tried to maintain the level of reimbursement for primary care services thus far, the future is uncertain and dependent on the state Legislature allocating additional funds to the

program. The SCMA has supported an increase in the cigarette tax with these funds being given to the state Medicaid program so that the 3:1 match from the federal government can be obtained.

Although the efforts of the SCMA, many county medical societies, and the Finance Commission to recruit and retain physicians to actively participate in the Medicaid program have been somewhat successful, we are disappointed that some colleagues still have not accepted their fair share of Medicaid patients. The problem appears to be most significant in the urban areas. Physician Medicaid participation data by specialty by county is available from the HHSFC for those who are interested in helping us continue to address this problem. We have not given up on the 1990 resolution from the SCMA House of Delegates to work on this issue.

We must compliment Dr. Laurent, Dr. Horton, Ms. Francis, Ms. Thomas, and Ms. Ricken and all of the other fine staff at the Finance Commission for their efforts beyond the call of duty to help physicians and their staff with Medicaid. One example of how satisfying it is to have a state program instead of a federal one is that Medicaid is continuing to reimburse physicians for their interpretation of EKGs whereas this is prohibited by Medicare.

Our committee remains concerned about the shortage of physicians in rural areas. We are asking that the SCMA Board of Trustees work with the appropriate agencies to provide low cost locum tenens services for physicians in underserved areas.

We stand ready to assist you with any suggestions/concerns you may have with Medicaid, primary care, or indigent care. We hope that all South Carolina physicians will help us serve our state by caring for those in financial as well as medical need.

Roger A. Gaddy, MD
Chairman

THE PUBLIC RELATIONS COMMITTEE

Public relations and communications have continued to be an important part of the South Carolina Medical Association's activities. In the past year, there has been a great increase in media interest in healthcare topics. Healthcare costs, HIV testing of healthcare workers and patients, RBRVS and self-referral are just a few of the topics which SCMA spokespersons have discussed with the media. There has also been increased involvement with public affairs programming both on television and radio.

Some of this year's projects include the following:

- The SCMA has worked with the SC AIDS Training Network and DHEC to provide AIDS Update programs for all county medical societies.

- The HIV/HBV Safety Network was developed to provide a mechanism for healthcare workers to ensure that they are in compliance with the CDC guidelines. A press conference was held and we received positive media attention throughout the state and nationwide.

- An organ donation poster has been developed with the SC Highway Department for placement in all DMV offices throughout the state.

- A great deal of work was put into Randy Smoak's campaign for the AMA Board of Trustees and this effort will continue for the 1992 election.

- An informational brochure on advance directives for use in physicians' offices is in the works. Printing will be held off until we know if the proposed healthcare power of attorney form will be approved by the legislature.

- A speakers training program was held during the Leadership Conference.

- *The Journal* and "Newsletter" have received a new look with the newly purchased desktop publishing equipment. The equipment has also been used for various

brochures and fliers.

- All county societies have been surveyed as to their PR needs and staff has worked with them as requested. County society presidents were also sent a list of PR activities that they could implement locally.

- Information on American Medical Radio News was sent out to all radio stations and several have begun picking up the daily broadcast from the AMA.

- We have continued to build the Speakers Bureau and sent out a letter informing other organizations that we have this service.

- The SCMA was also active in promoting the Red Ribbon Campaign, a community-based effort to fight teenage drug abuse.

We have continued several programs that were started last year such as the AMA-ABA substance abuse program, book reviews for *The State* newspaper and videotaping interviews with SCMA past presidents.

Staff has also represented the SCMA and been actively involved with committees such as the Childhood Injury Reduction Project, SC AIDS Training Network, Elder Affairs Advisory Council, Healthy People 2000, and the SC Hospital Association's Task Force on Advance Directives.

The public relations activities of the association will continue to be a priority especially as health care plays a larger role in this year's upcoming elections on both a state and federal level. It is important to communicate to the public, the media and our legislators that the well-being of the patient is utmost in the physician's mind.

John W. Simmons, MD
Chairman

THE SCMA/JUA PHYSICIANS' RISK MANAGEMENT COMMITTEE

The Physicians' Risk Management Committee has been quite active during the past year and has had some very significant accomplishments. We have worked very closely with the Joint Underwriting

Association (JUA) and the Patients' Compensation Fund (PCF) and, as all of you are aware, we had the second annual premium rate reduction in both agencies effective May 1, 1991. The further good news is that the JUA policyholders will receive a rebate amounting to 55 percent of the 1991 premium sometime this spring — probably in March. The PCF will award a credit on the 1992 premiums which will amount to 55 percent of the 1991 premium rate. Both of these agencies are in very sound financial condition which permits these actions by their respective boards.

As you know, last April we initiated the program for new physicians that provided a 50 percent reduction of premiums in the first year and 25 percent in the second year of practice. Another program was held in Columbia this past September: A total of 163 young physicians attended these programs and received this benefit. Similar programs are planned for April 29, 1992 in Charleston and for September in Columbia.

Another accomplishment has been the publication of the *Physicians' Guide to Medical Malpractice Law South Carolina* by William H. Hagood, III. This manuscript was purchased and has been distributed to physicians in our state. We ask that you read it and become familiar with the valuable information it contains. The more knowledgeable we are about the subject, the better we can protect ourselves.

I want to mention also the formation of an entity called the Patients' Foundation which is a tax exempt eleemosynary organization which has as its purpose to provide monetary grants to patients with unusual or adverse situations who are recommended by their physicians. It offers us a mechanism to materially help some of our patients whom we feel need it. This organization is free-standing with its own Board of Directors made up of business and professional people.

We regret the resignation of Danny Paysinger who has been on our committee since its beginning. Now we welcome Stoney

Abercrombie to our committee and know that he will be a very valuable member.

We appreciate so much, as always, the support the committee receives from Cal Stewart and we really could not function without Joy Drennen. The real secret to the success of our program is the cooperation and the support of South Carolina physicians.

Euta M. Colvin, MD
Chairman

THE SCMA/AHA-SC AFFILIATE JOINT COMMITTEE ON CARDIAC REHABILITATION

At the present time there are 24 certified cardiac rehabilitation programs in the state. They are in locations throughout the state as follows:

Anderson Memorial/ Anderson
Marlboro Park Hospital/Bennettsville
Kershaw County Memorial/Camden
Trident Regional Medical Center/Charleston
MUSC/The Citadel/Charleston
Roper Hospital/Charleston
Providence Hospital/Columbia
USC/Richland Memorial Hospital/Columbia
The R. Cathcart Smith Cardiac
Rehabilitation Program/Conway
St. Eugene Community Hospital/Dillon
Bruce Hospital/Florence
McLeod Regional Medical Center/Florence
Georgetown Memorial Hospital/Georgetown
Greenville Memorial Medical Center/
Greenville
St. Francis Hospital/Greenville
Self Memorial Hospital/Greenwood
The John Morrison White Program/
Lancaster
Loris Hospital/Loris
Marion Memorial Hospital/Marion
Mullins Hospital/Mullins
Grand Strand General Hospital/
Myrtle Beach
Orangeburg Regional Medical
Center/Orangeburg
Spartanburg Regional Medical Center/
Spartanburg

As you will note, three new programs were certified since last year. These are the Lexington Hospital Program, Self Memorial Hospital, and the Orangeburg Regional Medical Center.

The statewide Cardiac Rehabilitation Association is affiliated with the National Cardiac Rehabilitation Association and meets regularly. The Cardiac Rehabilitation Association receives staff support from the SCMA.

I would like to thank the committee members and the SCMA/AHA-SC Affiliate staffs for their invaluable help this past year.

Christie B. Hopkins, M.D.
Chairman

REPORT OF THE EDITOR OF THE JOURNAL

The Journal has made the transition to in-house typesetting (that is, desktop publishing) which should, in the long run, pare production costs. For the other aspects of day-to-day operation, I remain highly indebted to our managing editor, Joy Drennen. I'm also indebted to Betty Newsom of the Waring Historical Library for the excellent covers and cover stories, and to the members of our Editorial Board for their participation in all major decisions.

The number of unsolicited manuscripts was lower during 1991 compared to previous years. This concerns me, for we've defined our *raison d'être* to be a journal of, by, and for South Carolina physicians. We strongly encourage contributions by practicing physicians. In 1971, the late Dr. Joseph I. Waring exhorted practicing physicians to contribute articles to *The Journal* with these words:

It seems unfortunate that one large group of physicians who seldom publish or write anything are those who are very frequently on the main firing line of medicine. These physicians have a variety of experiences and develop practical approaches that are usually not

transmitted to others except by informal coffee room discussions. It is certainly true that putting together an article represents a fair amount of time and work and some individuals are more gifted for writing than others. It does seem, however, that approaches should be adopted to tap the wealth of clinical expedience and time proven expertise that many practitioners enjoy but which does not become available for others to share . .

I couldn't agree more!

Charles S. Bryan, MD
Editor

REPORT OF THE SCMA DELEGATION TO THE AMA

The details of the AMA Annual Meeting of June 1991 and the AMA Interim Meeting of December 1991 have been very succinctly incorporated into reports which appeared in *The Journal*, and we wish to thank Don Kilgore for preparing that material.

A great effort on behalf of the delegation was applied toward Randy Smoak's campaign for AMA Board of Trustees and, although the effort was two votes short, considerable recognition was achieved by the entire delegation. The auxiliary participated in this activity and it was nice to have an opportunity for this interaction with our fine auxiliary representation at the AMA Auxiliary Annual Meeting. The one Resolution which the SCMA Delegation carried to the AMA House of Delegates was in regard to the AMA adopting adequate funding of the Medicare program as one of its foremost legislative priorities for 1991. This Resolution was unanimously passed by the House of Delegates and incorporated in a Board of Trustees report.

During the Interim Meeting in Las Vegas, Walter Roberts served on Reference Committee H.

We are pleased that our AMA membership has continued to increase and now that we have exceeded 3,000 members, we are

eligible for a fourth AMA delegate and alternate. A determination for the selection of these two will be carried out by way of the SCMA Board of Trustees at the SCMA Annual Meeting in order to add one additional person to our delegation.

We are honored to serve the SCMA by representing you at the AMA level in the House of Delegates, as well as the other activities of which some of our members have been privileged to be a part, such as the OSMAP, the Forum, AMPAC and the very important activities of the House of Delegates. We encourage input from all members of the SCMA in issues and matters pertaining to those which the AMA addresses.

Randolph D. Smoak, Jr., MD
Chairman

REPORT OF THE SC INSTITUTE FOR MEDICAL EDUCATION AND RESEARCH (SCIMER)

The South Carolina Institute for Medical Education and Research will award 17 scholarship grants at the 1992 Annual Meeting of the South Carolina Medical Association. Twelve scholarships will be awarded jointly with the South Carolina Medical Association Auxiliary to six students from each of the two medical schools in South Carolina. Other scholarships to be awarded are the Stuckey Scholarship to a student from Bamberg County; two scholarships contributed by a cardiology group to students from upstate counties; and the Conway Hospital Medical Staff Scholarship to a student who is a resident of Horry County. The final award will be presented to a medical student who submits the best of entries for an essay on medical topics.

Each student at both South Carolina medical schools received a letter from SCIMER during the fall of 1991 to inform them of the scholarships awarded by SCIMER and to increase interest in

participation in the medical essay and research competition for monetary awards.

SCIMER would like to express appreciation for a large donation to the scholarship funds from the now non-functional Third District Medical Association. This donation and all other contributions by the physicians of South Carolina are conscientiously managed by the board and are used to encourage professional activities in the field of medical education and research.

I would like to express my appreciation to the Board of Directors of SCIMER for their sincere interest in the advancement of medical education in South Carolina and to Mn Bill Mahon and Ms. Ann DePalma for their outstanding staff support.

Eloise A. Bradham, MD
President

REPORT OF THE EXECUTIVE VICE PRESIDENT

It is my pleasure to report to the House of Delegates on the activities of the South Carolina Medical Association and its subsidiaries.

This past year I had the opportunity to accompany the president and other officers to a number of county medical society meetings. As in past years the opportunity to meet with you and discuss your concerns and the activities of the SCMA was very beneficial to me and very enjoyable as well. I hope that some of the component societies I have not had the opportunity to visit in recent years will see fit to invite me in the near future.

Our legislative activities have been modified this year to meet the requirements of the ethics law. Our objective is to operate legally and effectively so that the interests of organized medicine in South Carolina are represented well. We are dealing with a number of very important issues in the legislature this year and to date we have been successful. SOCPAC will continue to operate as in the past with the exception of the limits the new ethic law has placed on contributions.

The new limits are \$3500 per election cycle for statewide offices and \$1000 in the case of a candidate for any other office.

This year is the final year of my report on the impact of tort reform as requested by the House of Delegates four years ago. You have probably heard by now that there will be no increase in the JUA rates this year. You should have received earlier this month a rebate of 55 percent of last year's JUA premium. South Carolina JUA currently has the lowest malpractice rates in the country. The Patients Compensation Fund has announced that a credit of 55 percent will be given on this year's premium. South Carolina currently has the lowest professional liability rates in the country and we anticipate that the emphasis by the Bush administration on further tort reforms that the environment will continue to improve.

The implementation of the new Medicare payment system has added significantly to the activities of the staff with the numerous telephone inquiries from physicians and their staffs and the arrangement and coordination of the workshops we have been offering. The HIV/HBV Safety Network is up and running and providers are being tested on a voluntary basis. DHEC is currently developing legislation to bring the state into compliance with Federal law which requires that a system that meets the guidelines of the Center for Disease Control will be in place in the State by the middle of the year. We anticipate that the Medical Care Foundation will be an approved network.

Healthcare costs are without question the number one issue being discussed in our state and nation. Not a day passes that one does not read in a newspaper or magazine, see on television or hear on the radio some discussion of the cost of health care. The democratic members of our Congressional Delegation conducted town meetings all over the state to discuss the issue and in the state legislature bills are being introduced and more are in the planning stage that propose a wide variety of systems to revamp healthcare

delivery. There are between 20 and 30 bills currently pending in the U.S. Congress dealing with healthcare reform and at the state level studies are in process as well as a bill establishing a Health Care Cost Containment Commission. President Bush has announced his plan and raised the discussions to a level of high priority for the nation. SCMA staff are following all these activities and doing our best to keep the leadership informed of the progress of the various proposals.

Some of the legislative issues we have been tracking this year have included bills which should allow physical therapists to practice without a prescription from a physician or dentist, regulations that would allow nurse practitioners who work under supervision of a physician to prescribe certain drugs, mandatory HIV testing, and many others. To date the SCMA has been successful in achieving the legislative goals established by the Board of Trustees.

The financial affairs of the association and subsidiaries remain healthy as pointed out in the Report of the Treasurer. It was necessary to implement the third phase of the dues increase to overcome the deficits we were experiencing in the prior years. This year should allow for the replenishment of the reserves to the required level. The increase in the MIT premium rates are consistent with the health insurance industry and reflect the problem of the uncontrolled escalation of costs. In the month of January the MIT paid claims in an amount exceeding one million dollars for the month.

The campaign to elect Dr. Smoak consumed a considerable amount of staff time and the results were disappointing but we hope to be more successful this year. The campaign itself was by all accounts a success.

This year a milestone has been reached in that our membership in the American Medical Association has exceeded 3000 and as a result the SCMA is entitled to an additional AMA Delegate and Alternate Delegate both of whom you will be electing at this meeting.

The support given the staff and myself this past year by the membership and the leadership of the SCMA is truly appreciated and be assured that we will continue our best efforts to serve your best interests.

William F. Mahon

Executive Vice President

REPORT OF S. C. STATE BOARD OF MEDICAL EXAMINERS

This past year has been a very active and effective year for the board. This report shall present a brief statistical summary and review of the past year.

LICENSURE

In 1991, this board issued 580 permanent licenses to physicians. This compares to 507 such licenses issued in 1990. Of these licenses, 133 were issued by way of the FLEX examination. Four hundred forty seven (447) were issued by endorsement of credentials through the National Board or other State Boards. Of the 580 permanent licenses issued, 43 were issued to graduates of foreign medical schools. By way of comparison, in 1990, 23 graduates of foreign medical schools received permanent licenses. Of the 580 permanent licenses issued, 19 were issued to Doctors of Osteopathy.

This Board administered the FLEX examination in June and in December, 1991. In June, 13 examinees passed Component I and three failed; 12 passed Component II and one failed. In December, 13 examinees passed Component I and five failed; 15 passed Component II and two failed.

The SPEX (Special Purpose Examination) was administered in March, June, September and December, 1991. The results were as follows: March Exam: 13 took the exam, nine passed and four failed; June Exam: eight took the exam, six passed and two failed; September Exam: 10 took the exam, eight passed and two failed; and December Exam: 10 took the exam, nine passed and one failed. Limited Licenses are for residency training or

other supervised practice environments approved by the board. A Limited License is for a one-year period (July 1 - June 30th) or a part thereof. A total of 361 Limited Licenses were issued in 1991. Limited Licenses were issued to 299 United States/Canadian graduates; 62 Limited Licenses were issued to graduates of foreign medical schools. Six new Physician's Assistants were certified by the board in the past year. There are 60 Physician's Assistants certified in South Carolina.

The medical directory of physicians licensed in South Carolina was again printed in 1991. In the 1990-91 directory there were 5,767 physicians listed residing in-state, and 1,712 licensed in South Carolina, but residing out-of-state.

INVESTIGATORY AND DISCIPLINARY ACTIVITIES

In 1991, the board received 247 complaints. This compares to 178 received in 1990. Forty-seven (47) actions were issued by the board in 1991. These resulted in one revocation; 14 suspensions; five probation periods; one public reprimand; four private reprimands; two interim agreements and 20 agreements with conditions. In 12 of these cases, fines were also imposed. In 1991, 167 complaints were dismissed for lack of evidence of a violation of the Medical

Practice Act.

BOARD MEMBERSHIP

Two Board Members were reelected to the board in 1991: Stephen I. Schabel, M.D. (First Congressional District), and James S. Garner, Jr., M.D. (Sixth Congressional District).

Current officers and members of the board are: Stephen I. Schabel, M.D., President; Roy J. Ellison, Jr., M.D., Vice President; James S. Garner, Jr., M.D., Secretary; J. Ernest Lathem, M.D.; Vernon E. Merchant, Jr., M.D.; R. Patten Watson, M.D.; James C. Holler, Jr., M.D.; C. Dayton Riddle, Jr., M.D.; James R. Edinger, D. O.; and Mrs. Elizabeth S. Christensen.

Current members of the Medical Disciplinary Commission are: Douglas C. Appleby, M.D.; John A. Ouzts, III, M.D.; Alan W. Fogle, M.D.; Boyce M. Lawton, Jr., M.D.; C. Alden Sweatman, Jr., M.D.; Bryan L. Walker, M.D.; Daniel M. Elvin, M.D.; Joseph W. Dunlap, Jr., M.D.; Alfred G. Dawson, M.D.; Donald G. Gregg, M.D.; Jack A. Evans, Jr., M.D.; W. Wallace Fridy, Jr., M.D.; Robert E. Lee, M.D.; James L. Maynard, M.D.; Martin H. Zwerling, M.D.; Frederick G. Douglas, M.D. and James M. Rainey, M.D.

Stephen S. Seeling
Executive Director

RESOLUTIONS

SUBMITTED BY: Columbia Medical
Society

SUBJECT: **COUNTY MEDICAL
SOCIETIES**

WHEREAS; County Medical Societies are an essential and constituent part of organized medicine, providing:

1) A visible presence of organized medicine in the counties;

2) A training ground for future leaders of organized medicine;

3) A forum for educating physicians on healthcare issues;

4) A communications network throughout the state;

5) A source of "grassroots" support for the SCMA;

6) A vehicle for physician community service;

7) Local support for legislative objectives; and

8) Important contributions to improving the public image of physicians; therefore, be it

RESOLVED; That the South Carolina Medical Association reaffirm its position that county medical society membership is a prerequisite for South Carolina Medical Association membership; and, therefore, be it further

RESOLVED; That a good working relationship continue to be maintained by including county medical societies in the work of the South Carolina Medical Association.

SUBMITTED BY: Board of Trustees

SUBJECT: **THREE-YEAR
TRIAL FOR
REDUCING THE
LENGTH OF THE
ANNUAL MEETING**

WHEREAS; A recent survey of SCMA delegates by the Speaker of the House overwhelmingly indicated approval for reducing the length of the Annual Meeting; and

WHEREAS; Staff analysis indicates that it is feasible to reduce the length of the Annual

Meeting; therefore be it

RESOLVED; That the House of Delegates approve for a three-year trial that the 1993 Annual Meeting begin on Friday and end on Sunday; and therefore, be it further

RESOLVED; That the Speaker of the House of Delegates provide the House of Delegates a recommendation regarding future Annual Meetings at the 1995 Annual Meeting.

SUBMITTED BY: J. P. Booth, MD

SUBJECT: **HEALTH SERVICES
COST REVIEW
COMMISSION**

WHEREAS; The Board of Trustees of the South Carolina Medical Association has voted to support HR.4244 (the Honorable Billy Houck Bill); and,

WHEREAS; I am opposed to a new government bureaucracy for hospital control; control; therefore, be it

RESOLVED; That the SCMA rescind its support of HR.4244.

SUBMITTED BY: Medical Aspects of
Sports Committee

SUBJECT: **HIGH SCHOOL
HEALTH CARE**

WHEREAS; The SCMA Medical Aspects of Sports Committee would like to improve the high schools' sports pre-season physical program; and

WHEREAS; The SCMA would like to improve the communication of injury occurrence and treatment of injuries in high school athletics; and

WHEREAS; The SCMA, in conjunction with the South Carolina High School League and South Carolina Independent School League, has developed a standardized pre-season history and physical form and an injury recording form that have undergone preliminary testing and an attempt to promote a community effort by the local county medical societies to provide pre-season high school sports evaluation and proper injury

RESOLUTIONS

recording; therefore, be it

RESOLVED; That local county medical societies should sponsor the use of standardized pre-season high school sports evaluation forms and injury report forms by their members; and, therefore, be it further

RESOLVED; That local county medical societies, with the assistance of the SCMA, should encourage broad-based physician participation in providing these services to their community.

SUBMITTED BY: Sumter-Clarendon-Lee
Medical Society
SUBJECT: **AIDS AND THE
PUBLIC HEALTH**

WHEREAS; Over one million people in the United States are infected with HIV and will develop "full blown" AIDS and die a horrible death in the next several years; and

WHEREAS; This disease is increasing at a geometric rate, taking eight years for the first 100,000 cases to be reported but only two additional years for the second 100,000 cases; and

WHEREAS; 69 to 75 percent of the cases of those with AIDS in the United States are male homosexuals and this group has very high visibility and political clout, bringing tremendous pressure to blunt any reasonably prudent traditional public health measures; and

WHEREAS; There is no known immunization or cure or vaccine to combat this extremely complex and virulent retrovirus; and

WHEREAS; The treatment of "Third-Stage" AIDS is a potential threat to the entire healthcare delivery system expecting to require eight to 16 billion dollars in terminal stage management annually by the end of 1992, mainly from Medicare and Medicaid; and

WHEREAS; All modes of transmission have not been satisfactorily delineated for this disease as of yet; therefore, be it

RESOLVED; That the South Carolina Medical Association go on record as realizing

the dire public health threat and economic threat this disease poses; and, therefore, be it further

RESOLVED; That the South Carolina Medical Association bring all of its collective resources to bear to:

1. Educate the public as to the epidemic or pandemic which will ensue by the end of this decade; and

2. Lobby the legislature to enact laws which will require the reporting of the incidence of this disease in all three stages, mandate premarital testing for HIV, mandate screening of all hospital admissions for HIV, and direct DHEC to require the same type of contact investigations for AIDS patients as they currently require for the other less lethal sexually transmitted diseases; and, therefore, be it further

RESOLVED; That we in the medical profession respect this disease for the real medical menace that it is and resist the pressure of politically oriented groups who are succeeding in making this disease a political rather than a public health issue.

SUBMITTED BY: Sumter-Clarendon Lee
Medical Society
SUBJECT: **AIDS AND THE
PUBLIC HEALTH**

WHEREAS; Our foremost obligation as physicians is to protect, preserve, and foster the well-being of the patients we serve; and

WHEREAS; Over one million people in the United States are infected with HIV and will develop "full blown" AIDS and die a horrible death in the next several years; and

WHEREAS; The incidence of this disease is increasing at a geometric rate, taking eight years for the first 100,000 cases to be reported, but only two additional years for the second 100,000 cases; and

WHEREAS; 69 to 75 percent of the cases of those with AIDS in the United States are male homosexuals, and this group has very high visibility and political clout, bringing tremendous pressure to blunt any reasonably prudent, traditional public health measures;

and

WHEREAS; There is no known immunization, cure or vaccine to combat this extremely complex and virulent retrovirus; and

WHEREAS; The public needs to understand the full and expected extent of the AIDS epidemic, and how it is affecting them, and will affect them, both from the health and economic aspects; and

WHEREAS; The treatment of "Third-Stage" AIDS is a volatile threat to the entire healthcare delivery system, expecting to require eight to 16 billion dollars in terminal stage management annually by the end of 1992, thus draining healthcare dollars from the care of the elderly and indigent, which will be made up somewhere else in this society; and

WHEREAS; All modes of transmission are not yet known, and; therefore, unexpected modes may result in unexpected transmission from infected individuals, many of these individuals being unrecognized by the current testing requirements and procedures, and

WHEREAS; Premarital testing is not required for this lethal disease, leaving the spouse uninformed, and imparting needless risk to the innocent, potential offspring of the marriage; and

WHEREAS; In some states testing is required for diseases that are not lethal; and

WHEREAS; All patients entering the hospitals of this state are not tested for HIV infection, thus unnecessarily increasing the risk of infecting unknowing healthcare workers and others whose only protection has become "universal precautions", not specific to the illness of any patient, and whose HIV status may be unknown, and with HIV infection, unrecognized, may be contagious for many diseases, not just AIDS, both "opportunistic", and "non-opportunistic", such as tuberculosis; and

WHEREAS; The Department of Health and Environmental Control of this state does not conduct contact investigation of all individuals who are HIV-positive, for diverse

reasons; therefore, be it

RESOLVED; That the South Carolina Medical Association recognizes the seriousness of this threat to the public health, the elderly, the teenager, the indigent, all society, and the economy as well; and, therefore, be it further

RESOLVED; That the South Carolina Medical Association bring together and use all of its resources and apply them to:

A. Educate the public as to the extent of the current and expected epidemic of Acquired Immune Deficiency Syndrome (AIDS), and

B. Encourage, and actively lobby the legislature of this state to require reporting of this disease in all stages, to include those who are infected, but not active (report all HIV-positives); to mandate premarital HIV testing; to mandate testing of all hospital admissions; and to direct that the South Carolina Department of Health and Environmental Control conduct complete contact investigations on all individuals who are HIV-positive; and, therefore, be it further

RESOLVED; That the South Carolina Medical Association recognizes this disease as one that will require rational decisions and actions that are scientifically and public health motivated, rather than decisions and actions that emanate from special interest groups, are politically motivated, irrational, or otherwise not in the short, or long-term interest of the public health.

SUBMITTED BY: SCMA/AHA, SC
Affiliate Joint Committee
on Cardiac Rehabilitation
SUBJECT: **REIMBURSEMENT
FOR CARDIAC
REHABILITATION
SERVICES**

WHEREAS; It has been documented that South Carolinians are at a high risk for coronary disease; and

WHEREAS; South Carolina's coronary disease death rate is the highest in the nation; and

WHEREAS; This killer disease is fought

RESOLUTIONS

daily by cardiac specialists who provide comprehensive programs to help those suffering from coronary disease to achieve and maintain an optimum state of health; and

WHEREAS; Primary and secondary prevention of cardiovascular disease by risk factor reduction and exercise can reduce the human cost and monetary cost of disease and promote better health and wellness in our population; and

WHEREAS; The South Carolina Medical Association recognizes that formal cardiac rehabilitation programs can significantly reduce morbidity and mortality from cardiovascular disease; and

WHEREAS; The South Carolina Medical Association supports the SCMA/AHA; SC Affiliate Joint Committee on Cardiac Rehabilitation and the South Carolina Cardiac Rehabilitation Association and their certification and education programs to maintain high quality standards for cardiac rehabilitation in our state; therefore, be it

RESOLVED; That the South Carolina Medical Association urge third party payers to increase reimbursement for cardiac rehabilitation services performed by certified programs in South Carolina.

SUBMITTED BY: Lexington County
Medical Society

SUBJECT: **MEDICAL
MALPRACTICE**

WHEREAS; The Lexington Medical Association recognizes a concern regarding the availability and credibility of expert witnesses, and

WHEREAS; The American Medical Association adopted an ethical position on medical testimony in 1989 which states that, as a citizen and as a professional with special training and experience, the physician has an ethical obligation to assist in the administration of justice; and

WHEREAS; The SCMA Board in July, 1990 adopted a policy statement on "The Ethics of Medical Testimony" which states that physicians must realize that they can best serve the needs of the patient, of society, and of themselves by understanding the legal process and that physicians, in the fulfillment of their responsibility to their profession and to society, should agree to act as medical witnesses under appropriate conditions including testifying on behalf of their own patients and testifying, where indicated, for either the plaintiff or the defense; and

WHEREAS; The American Medical Association has proposed an alternative dispute resolution system which would handle medical malpractice cases in an administrative agency rather than the courts; therefore, be it

RESOLVED; That the South Carolina Medical Association disseminate the existing AMA and SCMA policies regarding expert testimony to all SCMA members; and, therefore, be it further

RESOLVED; That the SCMA meet with the SC Bar Association to discuss the AMA's alternative dispute proposal.

AMA SPECIAL GUEST: JOSEPH T. PAINTER, M. D. CHAIRMAN, BOARD OF TRUSTEES AMERICAN MEDICAL ASSOCIATION

Joseph T. Painter, M.D., Professor of Medicine and a Vice President at the University of Texas M.D. Anderson Cancer Center, was elected Chairman of the AMA Board of Trustees on June 28, 1990. He has been a member of the board since 1984. He has been a member of the Executive Committee since 1985 and the Finance Committee since 1984. He is a USC Delegate to the World Medical Association and is Chairman of the Council on Ethics of that organization. Like all officers and trustees, he has represented the association in testifying before Congress, in medical school visitations, in media tours, in government advisory committees and in Federation activities.

Dr. Painter's prior service in AMA included chairmanship of Work Group 6, Payment for Services, of the Health Policy Agenda in 1983, chairmanship of the Council on Long Range Planning and Development from 1979 to 1981, and chairmanship of Reference Committee F and the Special Committee of the House of Delegates (Finances and Structure) from 1974 to 1975. He was an AMA Commissioner to the Joint Commission on Accreditation of Healthcare Organizations and served as Chairman of the AMA Commissioners. He also served on the Ad Hoc Committee on Medical Ethics from 1978 to 1979 and was a Delegate in the House of Delegates from 1971 to 1984.

His other activities in organized medicine were as a member of the Texas Medical Association Board of Trustees and the Board of Directors of the Texas Medical Foundation, the PRO, from 1984 to 1989; Councilor from Texas in the Southern Medical Association from 1985 to 1990; and President of the American Society of Internal Medicine from 1970 to 1971.

Dr. Painter, a nationally recognized



authority on cancer control, joined the M.D. Anderson Cancer Center faculty in 1975. He is a Professor of Medicine and Vice President for Health Policy. In addition, he is a Professor of Internal Medicine at the University of Texas Medical School at Houston and a Clinical Associate Professor of Medicine at Baylor College of Medicine.

Born October 2, 1927, in Austin, Texas, Dr. Painter received his M.D. degree from the University of Texas Medical Branch at Galveston in 1949, after which he served his internship and residency in Internal Medicine at the Hospital of the University of Pennsylvania. He is a Diplomate of the American Board of Internal Medicine and a Fellow of the American College of Physicians.

Dr. Painter and his wife, Ann, who reside in Houston, have four grown children and seven grandchildren.

SCMA ANNUAL MEETING EXHIBITORS 1992

BOOTH COMPANY NUMBER

1, 2	Abbott Laboratories
50	American Heart Assoc., SC Affil.
17	CAREMARK
64	Carolina Medical Review
20	Carolina Physicians Advisory Svc.
7	Central Pharmaceuticals, Inc.
37	CHAPS Recovery Programs
56	Claim Jumpers
33	Coastal Emergency Svcs of Columbia
13, 14	Companion Technologies
76, 77, 78	CompuSystems, Inc.
53	Computer Directions EzMed
8, 9	DataFlow Companies, Inc.
67	Disability Determination Div., SCVR
54	Doctor/s Home Health
24	Dupont Pharmaceuticals
29	Durr Medical Corporation
49	Electronic Healthcare Services,
21	Fisons Pharmaceuticals
25	Fujisawa Pharmaceutical Company
12	Geigy and Basel Pharmaceuticals
3	GLAXO
62	Health Images, Inc.
4	I. C. System, Inc.
32	ICI PHARMA
44	IV Therapy Associates
57	Janssen Pharmaceutica
45	William Kean & Associates
15	Lederle Laboratories
72	Marion Merrell Dow, Inc.
31	Mead Johnson Nutritionals

BOOTH COMPANY NUMBER

54	MedCorp
34	The Medical Protective Company
16	Merck Sharp & Dohme
26	Miles, Inc., Diagnostics Division
59	MUSC Alumni Association
27	Parke-Davis
55	Personal Blood Storage of America
23	Pfizer Laboratories
43	Pfizer-Roerig
6	Physician Recruitment
41	Physician Sales & Services
66	The PM Group - Columbia, Inc.
73	Pratt Pharmaceuticals
75	Prudential Securities
71	Quick Notes/HSP Associates, Inc.
68	Roche Biomedical Laboratories
48	Sandoz Pharmaceuticals
38	G. D. Searle & Company
10	Southeastern Hospital Supply
74	Southern Medical Association
28	SC Organ Procurement Agency
11	Smithkline Beecham Pharms.
39	Syntex Laboratories
40	Transworld System, Inc.
18	UAD Laboratories
51	U. S. Army Medical Department
70	U. S. Navy Medical Programs
63	USC School of Medicine
5	The Upjohn Company
36	Wallace Laboratories
69	Winchester Surgical Supply
30	WORKREHAB
19	Wyeth Ayerst Laboratories

THE UNITED STATES ARMY RESERVE HEALTH CARE PROFESSIONALS BONUS TEST PROGRAM

\$10,000 - \$20,000 - \$30,000

The **1989 National Defense Authorization Act** required that the Department of Defense conduct a test to determine the effectiveness of a recruitment bonus to attract health care professionals to the Selective Reserve of the Army. The 1991 National Defense Authorization Act directed that the test continue.

The Bonus Test Program is offered to physicians in the following specialties:

**ANESTHESIOLOGY
ORTHOPAEDIC SURGERY
and
GENERAL SURGERY**
(Including selected subspecialties)

Applicants must be board certified or meet all requirements for board candidacy in one of the above specialties.

BONUS ELIGIBILITY: In addition to meeting all criteria for appointment as a medical corps officer in the US Army Reserve, Bonus Test applicants must be civilians and if prior service, discharged before 28 April 1989.

BONUS AMOUNTS: The test offers \$10,000 bonus for each year of affiliation with the Selected Reserve of the Army, up to a maximum of 3 years. Physicians must choose 1, 2, or 3 years of affiliation at time of application. Bonuses will be paid annually at the beginning of each year of agreed affiliation.

TEST PARAMETERS: The design of the test stipulates that bonuses be offered in certain geographic areas. To qualify, applicants must reside within those areas at the time of accession.

**TO FULLY DETERMINE YOUR ELIGIBILITY FOR THIS PROGRAM
PLEASE CONTACT:**

U.S. ARMY RESERVE HEALTH CARE TEAM
Strom Thurmond Fed. Bldg., 1835 Assembly St., Rm 575, Columbia, SC 29201
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David O. Kaylor

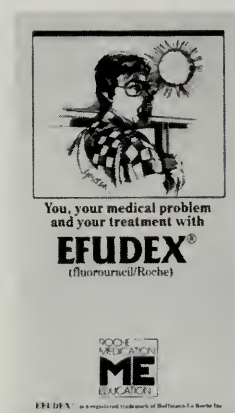
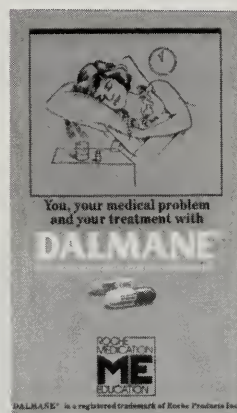
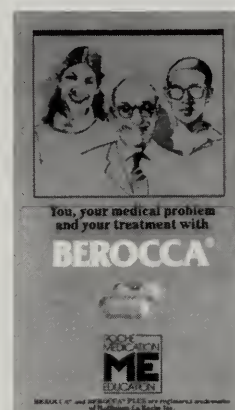
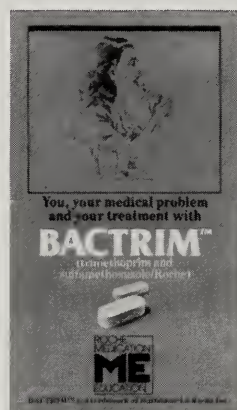


Beverly W. Toner

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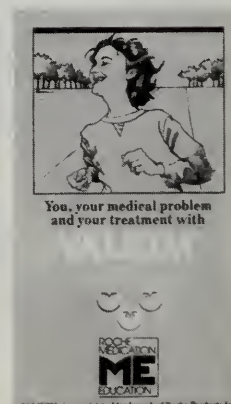
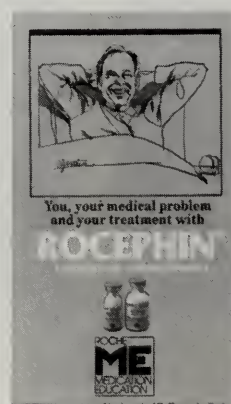
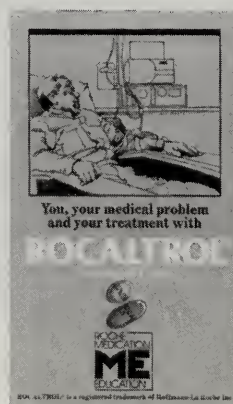
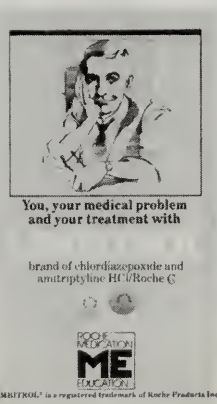
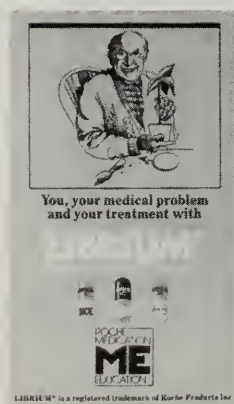


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Editorial

L THROUGH Z (WITH APOLOGIES TO CHRIS HAWK)

At last year's annual meeting, Chris Hawk gave a memorable presidential address urging us to be good doctors beginning with "A is for ability." Proceeding down the alphabet, Chris emphasized good medicine above all else during these times of economic uncertainty. I complimented Chris and he responded: "Why don't you finish the alphabet for me—pick up where I left off." Well, Chris, here goes.

L is for *latitudinarian*. Now there's a word I don't get to use every day! As an adjective, it refers to tolerance of others' opinions, however different from ours. Health care is a multifaceted enterprise in which everyone has a stake. We must appreciate that others' opinions may seem equally valid from their perspectives. As St. Francis of Assisi prayed, we should ask not so much "to be understood as to understand." We must *listen*.

M is for *motivated*. I've never heard anyone say that medicine—or, for that matter, life—is easy. But from time to time and place to place, hard work becomes unfashionable. If we're to make a difference, there's no substitute for putting in the time and effort. William Osler called work "the master-word in medicine." He took his own inspiration from Thomas Carlyle: "Our duty is not to *see* what lies dimly at a distance, but to *do* what lies clearly at hand."

N is for *noble*. Medicine is a noble calling. Yes, cynics both beyond and within our profession will mock this high-sounding declaration—as they've done for centuries. We must heed the inner voice, the one we brought before the medical school admissions committee. We must remember also that nobility obligates—*noblesse oblige*. *Noble*: "having or showing high moral qualities or ideals; characterized by or characteristic of

greatness of character; lofty."

O is for *optimistic*. In so many ways, the future of medicine has never been brighter. Computer technology holds the promise of new information systems which will revolutionize the way we practice—for the better. Newer imaging techniques, laparoscopic surgery, pharmaceutical advances, and basic research hold the promise that medicine will become increasingly curative and increasingly humane. Ours is the *opportunity* to do so much for so many—and to do it better.

P is for *prudent*. Thomas Aquinas ranked prudence first among the four cardinal virtues (the others are justice, courage, and temperance). The Hebrew sages gave primacy to wisdom and had a great deal to say about it; for instance: "A wise man will keep quiet till the right moment, but a garrulous fool will always misjudge it." (Ecclesiasticus 20:8). As Chris Hawk made clear, we must first be good doctors. In the public forum, our proposals should reflect careful deliberation, fairness, and good timing. Prudence. . . reflecting yet not consumed by *pride*.

Q is for *questioning*. All knowledge derives from this attitude. Recall Rudyard Kipling's famous ditty: "I keep six honest serving men / (They taught me all I knew); / Their names are What and Why and When/ And How and Where and Who." That the secret of science is the ability to ask the right questions is well-known. Less widely appreciated is the need to challenge constantly all assumptions about social and economic issues. Wise elders often confide that advancing years bring "fewer answers and more questions." James Thurber quipped: "It is better to ask some of the questions than to know all of the answers."

R is for *rested*. This one may come as a

surprise. I include it because of my conviction that our first responsibility—to ourselves, our families, and our patients—is to take good care of ourselves. None of us need be reminded that medicine can be both physically and mentally exhausting. Many of us endured training programs in which we were expected to function normally and without complaint despite severe sleep deprivation. Among my fondest hopes is that the combination of more doctors and better technologies will enable nearly everyone to be cared for by well-rested physicians. Today's sleep laboratories confirm what Shakespeare knew all along about this important function: "Balm of hurt minds, great nature's second course, / Chief nourisher in life's feast."

S is for *sacrificing*. I choose sacrificing not in the sense of martyrdom but rather in the sense of "giving up, . . . or foregoing of some valued thing for the sake of something of greater value or having a more pressing claim." Throughout recorded history, successive generations of physicians have discovered the old truism—perhaps best stated by Jesus of Nazareth—that there is no better way to live than that of losing oneself in a life of *service*. No, it should not be necessary to sacrifice our own health or financial security, nor those of our family members. Yet beyond these desiderata we must recognize that good medicine is indeed a higher cause, something "of greater value or having a more pressing claim" than our own immediate interests.

T is for *trustworthiness*. I recognize that this one seems rather trite, straight from the Boy Scout oath: "trustworthy, loyal, helpful, friendly, courteous, kind...." However, I can think of no better advice for any person or organization and no better reminder to myself than the daily need to make one's word as valid as any bank note in the world. Trustworthiness also implies *tact* and the ability to keep a confidence. As Robert Louis Stevenson put it, the physician needs "discretion, tested by a thousand secrets; tact, tried in a thousand embarrassments...."

U is for *uncertain*. We must acknowledge

that such is the nature of our art. A famous professor of psychiatry once declared medical education to be, in fact, "education for uncertainty." This principle needs reinforcement in today's climate of high public expectations for certitude, for technical answers to all symptoms. Of occasional physicians, one sometimes hears the epithet, "sometimes wrong but never in doubt." The greatest physicians (including Osler) have been those who could say openly and candidly, "I do not know." I try to make it a practice to say, even when quite sure about a diagnosis, "I'm 99.9 percent confident that...." Medicine can be humbling. All of us can be wrong!

V is for *vocal*. We must not be afraid to speak up, when indicated. We should recognize, however, that this is best done through the collective forum of organized medicine. In the public forum, we must (1) listen; (2) think; and (3) speak. Many, perhaps most physicians eschew politics for one reason or another. We must remember the truism that, in the last analysis, everything is political. It follows, as John F. Kennedy put it, that "political action is the highest responsibility of a citizen." We cannot afford to be uninvolved. The surest course is by support of and participation in our medical organizations.

W is for *watchful*. We value our art and science. We value the *wisdom* imparted by a medical education. We value the need for carefully-planned clinical trials prior to the releasing of new therapies. Now, as in the past, there are those who would allow less-thoroughly trained persons to practice medicine *de facto*. Mending our fences when necessary, we must preserve the rights, privileges, and duties of physicians for future generations. We must remember the centuries-old advice to be "as wise as the serpent and as gentle as the lamb."

X is for *xenophilia*. Wait—don't consult your dictionary; I made this one up. "Xenophobia" (fear of strangers or foreigners) is a word; why not its opposite? By *xenophilia*, I emphasize that our love for

humanity should include love for people with backgrounds and value systems quite different from our own. Isn't this, after all, one of our greatest privileges: the opportunity to empathize with a broad range of humanity? There should be little or no place for the physician whose love of humanity extends only to his own kith, kindred, or kind.

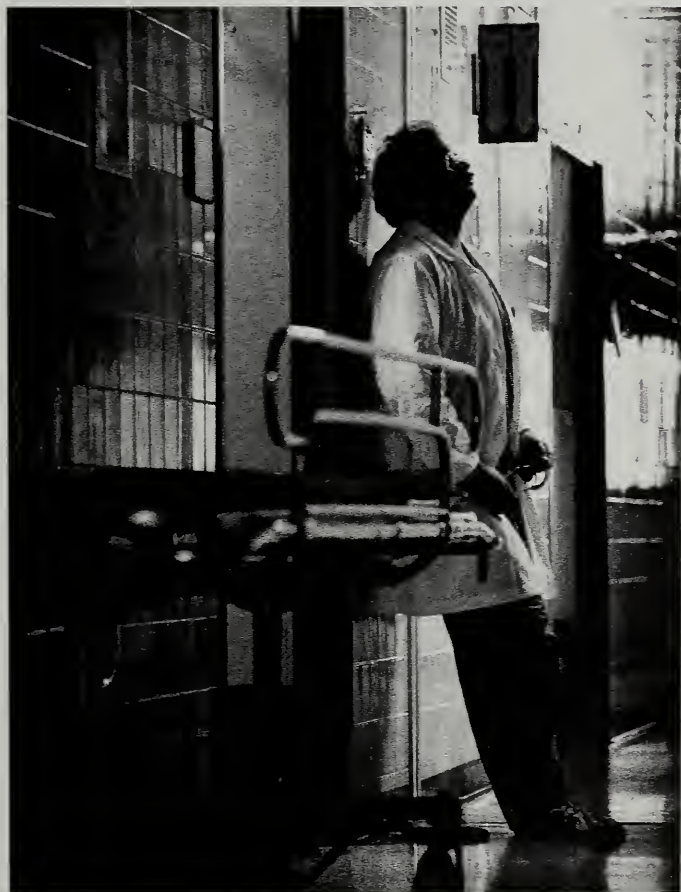
Y is for *yearning*. We should yearn for ways to do things even better. We should yearn not only for better medicine but also for a better society. We must dream. We must form a collective vision of what we would like medicine to be in, say, ten, twenty, or thirty years. It seems likely that at some point in the near future, Congress will pass legislation with a major impact on the medical

profession. At this writing, it seems unlikely that such legislation will be passed during 1992, an election year in which there will be much posturing but perhaps little or no definitive action. We have a window of opportunity. We must yearn for a bright future for medicine and for our profession—and then move to ensure it.

Z is for *zealous*. We must take zealous pride in our heritage. We must try zealously to improve quality, affordability, and access. We must take a zealous interest in the issues of our times. Through our organizations.

Well, Chris, that's enough. Whew

—CSB



“Being a patient advocate is what being a physician is all about.”

Dr. Kevin Fullin, Cardiologist, Kenosha, Wisconsin,
Member, American Medical Association

Why would a cardiologist get involved in the issue of family violence? Perhaps, because what he saw simply cried out for action.

“Fully a third of all women's injuries coming into our emergency rooms are no accident,” says Dr. Fullin.

While others were content to downplay the issue of family violence, Dr. Fullin would not. He petitioned state officials, and through his efforts the first Domestic Violence Advocate Program in his state was created.

“Organized medicine must serve as an advocate for patients,” stressed Dr. Fullin.

The American Medical Association (AMA) couldn't agree more. We're committed to focusing physician attention on the issue of family violence.

Become a member of the AMA today.

Members of the AMA are encouraged to join their state, county and specialty societies.

American Medical Association

Physicians dedicated to the health of America



On the Cover:

EUGENE WASDIN, M.D. 1859-1911

Nineteen ninety two marks the centennial of the founding of the Alumni Association of the Medical University of South Carolina. Following the commencement exercises in March of 1892, several graduates and faculty members met and formally established the Association. Dr. Eugene Wasdin, winner of the collegiate prize for the best examination at his graduation 10 years earlier, was elected president. Dr. Wasdin was at the time Professor of Histology and Pathology at his alma mater and was a surgeon with the US Public Health and Marine Hospital Service stationed at the Marine Hospital in Charleston. He remained in the Public Health

Service for the duration of his life. His was a Remarkable career. He received honors for his work on yellow fever and was decorated by the King of Italy for his help in epidemics in that country.

Dr. Wasdin was stationed at Buffalo, New York, when on September 6, 1901, President William McKinley was shot. Wasdin was called in and administered the anesthetic during the surgery on the president and, with the other members of the medical team, attended McKinley until his death.

Wasdin was a native of Georgetown where he is buried.

Betty Newsom

The Waring Historical Library

PHYSICIAN RECOGNITION AWARDS

The following SCMA physicians are recent recipients of the AMA's Physician Recognition Award. This award is official documentation of Continuing Medical Education hours earned.

Naseeb B. Barood, M.D.
Hugh W. Barrow, M.D.
Nabil K. Bissada, M.D.
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Rajko Medenica, M.D.
J. S. Neviasser, M.D.
Gregory E. Smith, M. D.
Warren G. Tucker, M. D.
Brian K. Waltmann, M. D.



Auxiliary Page

SCMAA AUXILIARY: 1991-1992

The South Carolina Medical Association Auxiliary had a very exciting and successful year as each county auxiliary "made their lives count" through auxiliary. As I traveled the state I was impressed with the many health projects by auxiliaries that impact the health and quality of life of our communities.

The Health Projects Committee initiated two new projects; the teen card and "Grow With Books." The teen card, "Teen Direct Line," is a business size card that can be carried in a wallet. The card has emergency toll free numbers such as rape crisis, child abuse, suicide, and a space for the family physician's name and number. These were distributed to South Carolina teens by the county auxiliaries. The State Library asked the Auxiliary to participate in their "Grow With Books" project in which a first book is sent home with each newborn. There are pilot programs in six counties; Laurens, York, Oconee, Dillon, and Charleston. Auxiliaries working hand in hand with their local libraries!

The AMA/ERF Committee had a successful Christmas tree skirt raffle raising \$1123 and has surpassed all previous yearly contributions. The checks will be presented to the Medical University of South Carolina and the University of South Carolina School of Medicine at the SCMA House of Delegates in Charleston.

The Legislation Committee sponsored a "Day At The Capital" in February. Each county auxiliary met briefly with their legislators and then met for lunch where we all were briefed on current legislation concerning medicine by Jan McKellar and Steve Williams. The committee has conducted two SOCPAC membership drives during the year.

The Membership Committee published three brochures encouraging SCMA spouses to join Auxiliary. All county medical societies that do not have an auxiliary were contacted and encouraged to organize in their area. RECRUITMENT and RETENTION has been the goal.

The Health Education Van continues to travel the highways of South Carolina to bring health education to our schools. The HEV video produced by South Carolina ETV and the Department of Education was made available to all county auxiliaries for the education of the public regarding the van.

The Physician's Family Support Committee was successful in recruiting volunteer auxiliaries "to be there" with the spouse of the impaired physician when he/she has left for treatment. Handwritten condolence, con- gratulatory, and birthday notes were sent to physicians' families over the state through out the year. Each county auxiliary has a Physician's Family Support committee to help their local members in time of crisis.

Judy Jarrett's watercolor, "Southern Nostalgia," has traveled with me throughout the year. We are grateful to Judy for this contribution. All proceeds from the raffle will go for health projects. The drawing will be at convention.

The SCMA Auxiliary appreciates the support and guidance given by the SCMA. We thank Dr. Hawk and Mr. Mahon for attending the Fall Executive Board meeting and giving SCMA updates. We thank the SCMA Board of Trustees for the opportunity to attend their meetings and their support of our projects.

The Auxiliary is very grateful for the services of Mrs. Joyce Jenkins and the SCMA staff. Their expertise and willingness to help has been of great service to the auxiliary committees and especially to me in carrying out my duties as president

Virginia Johnson (Mrs. C. Birnie)
SCMA Auxiliary President

Classified

PHYSICAL MEDICINE: Full-time medical consultant positions available at the Disability Determination Division of the Vocational Rehabilitation Department. Involves review of medical records, assessment of impairment severity, and functional capacity on Social Security Disability claims. No patient contact. No night or weekend hours. Positions available in Columbia and Greenville. Starting salary negotiable. Excellent state government fringe benefits include health insurance (medical and dental), paid vacation, sick days, deferred compensation plan, and retirement program. South Carolina license required. *Contact Richard A. Vandiver, Director, Disability Determination Division, PO Box 60, West Columbia, SC 29171 (803) 822-5350.* An equal opportunity employer. Male/female.

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Medicine for a special physician. It don't get no better - friendly town with excellent quality of life. BC/BE only, please. \$100,000+ Want more info? *Contact Cheraw Family Medicine, Attention: C. Radkin, PO Box 867, Cheraw, SC 29520 (803) 537-2171. Call Collect.*

ACKNOWLEDGEMENTS

The SCMA gratefully knowledges contributions from Syntex Laboratories and Pfizer Laboratories for grants for scientific speakers.

Contributions to defer meeting costs have been received from The R. L. Bryan Company, Preferred Reinsurance Intermediaries, Inc., Boyle Vaughan Associates, and NBSC.

The President's Reception on Saturday evening, May 2, 1992, is compliments of Carolina Physicians Advisory Service.

The Residents Breakfast Meeting is compliments of the Resident Physicians Services Division of the American Medical Association.

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President's Page

PRESIDENT'S INITIATIVES

It is with a deep sense of pride, as well as humility, that I begin my year as President of the South Carolina Medical Association. I express my sincere thanks to all those members who have supported me through the years. As those of you who attended the installation ceremony know, I have outlined four initiatives to try to accomplish in my year as President.

- **INCREASE VOLUNTEERISM** amongst physicians across the state by setting up free clinics or expanding on the ones already in existence. There is a wonderful resource of retired physicians who, given the proper situation, would volunteer some of their time as well as their expertise in staffing some of these clinics. We also need to educate the public on the amount of volunteerism that already exists and that we are willing to provide more.

- **MORE INVOLVEMENT OF THE PRIVATE SECTOR.** With the governmental bodies pulling back from the financing of health care, the private sector needs to become more involved and giving through hospital foundations is going to become more important. The Patients' Foundation of South Carolina is also a tax-free vehicle which deserves your consideration.

- **IMPROVE PATIENT SATISFACTION.** Hospital patients' satisfaction is more closely linked to the caring behavior of the hospital staff than it is to the quality and quantity of hospital amenities. Even though lots of money is spent on marble, glass, carpets, bronze and hotel-like settings, I would like to see more money allocated to the South Carolina Higher Education Commission to fund nursing education so that we could be instrumental in having better and more available bedside nursing care.

- **MY FAVORITE INITIATIVE — STOP THE DUPLICATION OF SERVICES.** The Russians and the Americans have seen fit to stop the arms race. Providers in the metropolitan areas need to learn to cooperate, collaborate, and see where they can share costs and, in some instances, consider merging. Efforts and financial resources directed in this constructive manner, in my opinion, would be better spent than in marketing.

Any physician could draw up his or her own set of initiatives. As Dr. Arnold Relman has stated, the key question is "Will medicine now become essentially a business, or will it remain a profession?" Let's remember to keep the patients first and foremost and make every effort to improve our profession. I solicit the support of the membership in any of the above initiatives. If there are any questions, please let me know, and if any member would like to serve on any of our committees, a list is available. I encourage and welcome your input into our association.

Bartolo M. Barone, M.D.
President

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EDITOR

Charles S. Bryan, M.D.
SCMA, P.O. Box 11188
Columbia, S.C. 29211

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SPECIAL ISSUE: MEDICAL AND SURGICAL MANAGEMENT OF EPILEPSY

INTRODUCTION

GUEST EDITOR: CURTIS WORTHINGTON, M. D.*

Epilepsy, the falling sickness, has baffled and beguiled mankind for centuries. Its earliest description is to be found in the writing of Hippocrates. St. Paul, Mohammed, Joan of Arc, and Dostoevsky are among the many of historical note who are thought to have been afflicted by it. It has been the subject of great literature, including and especially Shakespeare (*Othello* and *Julius Caesar*). As Erma Ozer has pointed out in her recent article in the journal *Epilepsia*, it has been associated variously with evil, with saintliness, and with genius. Epilepsy is a relatively common malady, said to afflict one percent of the population. It is only in this century that medical science has made strides in the conquest of this interesting, often puzzling disorder.

The purpose of this issue is three-fold. The first purpose is to encourage the physicians of South Carolina to identify the epilepsies in their daily practice, and to promote understanding that in spite of the sophisticated testing here discussed, the diagnosis of epilepsy is essentially a clinical diagnosis. It is identified, by its sudden onset and peculiar manifestations. The article by Dr.

William Brannon in this issue describes the various forms that epilepsy may take. The second purpose of this issue is to review the current medical and surgical options in the treatment of epilepsy, and to examine the important new methods of evaluation in epileptic disorders. The third purpose is to encourage referral by the primary care physicians in the state, to epileptologists and epilepsy centers where such diagnosis and treatment can be carried out.

This special issue includes the previously cited article by William Brannon on the classification of epilepsies. Dr. Braxton Wannamaker and Dr. John Plyler have contributed an article reviewing the medical treatment of epilepsy in adults. Dr. Paul B. Pritchard has written on the subject of intensive neurodiagnostic monitoring. There is an article by myself on invasive monitoring and temporal lobectomy. This is complemented by another article on the surgical management of the epilepsies by Dr. Cristian Vera, covering hemispherectomy, callosotomy, and frontal lobectomy. Dr. Kenton R. Holden and Dr. Bruce B. Storrs have contributed articles on the evaluation, medical and surgical treatment of pediatric epilepsy. Finally,

*125 Doughty Street, Suite 400, Charleston, SC 29403.

INTRODUCTION

Dr. Jane Tyler and Dr. Christopher Starr have contributed an article on functional imaging of epileptic foci with positron emission tomography and single photon emission computed tomography.

It should be emphasized that the treatment of epilepsy requires coordinated comprehensive care which involves many disciplines. The involvement of neurologists, neurosur-

geons, neuroradiologists, psychologists, social workers and nurses are all essential. Indeed, a nursing perspective rounds out the present issue. We hope that you will enjoy this issue and that it will serve as an update in the evaluation and treatment of the epilepsies.

We wish to thank Parke-Davis for financial support in the production of this issue. □



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CLASSIFICATION OF THE EPILEPSIES

WILLIAM L. BRANNON, M. D.*

For how long classification of diseases has been attempted is lost in antiquity. Epilepsy was perhaps first classified as a sacred disease, calling attention to the prevailing ideas about etiology of the seizure. Hippocrates¹ wrote that the disease was no more sacred than any other and suggested that epilepsy be classified as a nutritional disorder. That led to considerations for treatment. The Hippocratic writings on epilepsy were directed to laymen, thus, also the first efforts toward education of persons about epilepsy. Subsequent years have brought a variety of classification schemes to assist in organizing thinking, to assist in determining prognosis, establishing a diagnosis and effecting treatment for the patient with epilepsy. In addition, better classification has immeasurably improved the ability of specialists from different disciplines to communicate with one another on the various aspects of epilepsy. In 1969 the International League Against Epilepsy developed a classification scheme based on the assignment of seizures to one of two groups—generalized or partial.² That has subsequently been revised into a classification based on clinical and electroencephalographic (EEG) patterns.³ That revision came about following the advent of intensive monitoring of patients and recording their seizures with EEG superimposed on video recordings of the patient during an ictus. In addition to classification of seizure types, a related classification considers epilepsies and epileptic syndromes.⁴ That allows the placement of individual seizure types into recognizable syndromes.

A first step in the approach to a patient having experienced a seizure is the classification of the seizure type as a general or partial seizure.

*Department of Neuropsychiatry and Behavioral Science, University of South Carolina School of Medicine, Columbia, SC 29208.

PARTIAL SEIZURES (TABLE I)

The distinctive feature of a partial seizure is the preservation of consciousness at the onset of the ictus. In simple partial seizures consciousness is not altered at all, so that the patient can recount all of the events of the seizure. This class of seizure encompasses the traditional focal motor and "Jacksonian" seizure. A focal motor seizure is an event in which a single muscle or muscle group undergoing repetitive contraction is the reflection of the seizure. A "Jacksonian" seizure is one in which there is a march of motor seizure activity following the anatomical correlates of the "motor strip" in the posterior frontal lobe of the brain. Recall the homunculus, that distorted person with a huge mouth, large tongue and thumb, and with lesser territory devoted to the remainder of the body. Thus the onset of a "Jacksonian" seizure is in either the mouth or tongue or thumb with spread of the seizure activity to the arm, trunk and leg. Versive or postural seizures are those in which there is a component of turning the head or body or some alteration of posture, be it tonic posturing or on the other hand losing posture.

Sensory components of simple partial seizures include numbness or tingling (Paresthesia) which may be localized or may march in a fashion similar to the "Jacksonian" motor seizure.

Visual disturbances may be as elaborate as a formed hallucination; patients may describe elemental visual experiences such as flashing lights, or more elaborate formed hallucinations described in older literature as psychic seizures. These are sometimes complex and include other sensations as well.⁵ Auditory sensations parallel the visual disturbances. Most often they are unformed hallucinations but occasionally may be well formed and elaborate.

TABLE I³
CLINICAL SEIZURE TYPES
PARTIAL SEIZURES

- A. SIMPLE PARTIAL SEIZURES (CONSCIOUSNESS NOT IMPAIRED)
 - 1. WITH MOTOR SIGNS
 - A. FOCAL MOTOR WITHOUT MARCH
 - B. FOCAL MOTOR WITH MARCH (JACKSONIAN)
 - C. VERSIVE
 - D. POSTURAL
 - E. PHONATORY
 - 2. WITH SENSORY SIGNS
 - A. SOMATOSENSORY
 - B. VISUAL
 - C. AUDITORY
 - D. OLFACTORY
 - E. GUSTATORY
 - F. VERTINOUS
 - 3. WITH AUTONOMIC SYMPTOMS OR SIGNS
 - A. EPIGASTRIC SENSATION
 - B. PALLOR
 - C. SWEATING
 - D. FLUSHING
 - E. PILOERECTION
 - F. PUPILLARY DILATION
 - 4. WITH PSYCHIC SYMPTOMS
 - A. DYSPHASIC
 - B. DYSMNESIC
 - C. COGNITIVE
 - D. AFFECTIVE
 - E. ILLUSIONS
 - F. STRUCTURED HALLUCINATIONS
- B. COMPLEX PARTIAL SEIZURES (WITH IMPAIRMENT OF CONSCIOUSNESS)
 - 1. SIMPLE PARTIAL SEIZURES FOLLOWED BY IMPAIRMENT OF CONSCIOUSNESS
 - A. WITH FEATURES AS NOTED IN SIMPLE PARTIAL SEIZURES, FOLLOWED BY IMPAIRMENT OF CONSCIOUSNESS
 - B. WITH AUTOMATISMS
 - 2. WITH IMPAIRMENT OF CONSCIOUSNESS AT THE ONSET OF THE SEIZURE
 - A. WITH IMPAIRMENT OF CONSCIOUSNESS ONLY
 - B. WITH AUTOMATISMS
- C. PARTIAL SEIZURES EVOLVING TO SECONDARILY GENERALIZED SEIZURES. (THESE MAY BE TONIC-CLONIC, TONIC, OR CLONIC)
 - 1. SIMPLE PARTIAL SEIZURES EVOLVING TO GENERALIZED.
 - 2. COMPLEX PARTIAL SEIZURES EVOLVING TO GENERALIZED.
 - 3. SIMPLE PARTIAL SEIZURES EVOLVING TO COMPLEX PARTIAL EVOLVING TO GENERALIZED SEIZURES.

Olfactory sensations are mostly experiences of indescribable unfamiliar odors. Usually unpleasant some on the other hand may be pleasing and even familiar, such as odors from cooking in mother's kitchen. Gustatory hallucinations parallel the primary sensations of taste; bitter, salty, or acid. Metallic taste reports are common, even to identifying the taste of copper. Formed hallucinations of taste though are rare.

Sensations of vertigo are common and consist of rotation or forward tumbling. Some patients have reported sensations of floating and others report more complex sensations similar to claustrophobia.⁶

Autonomic seizures include such symptoms as vomiting, abdominal pain, nausea, pallor, tachycardia, flushing, pupillary dilatation, borborigmi, and incontinence. Abdominal sensations seeming to rise up to the throat are the original aura, a word referring to a gentle breeze and later denoting the warning that a seizure was about to occur. Now those sensations are recognized as a simple partial seizure.

Partial seizures with psychic symptoms do not generally occur without some impairment of consciousness thus are complex partial seizures. Symptoms involving language disturbances such as aphasia may occur. The feeling that a person is in a very familiar place when in fact the place is or should not be familiar is De Ja Vu while the opposite may occur as Jamais Vu. Those memory distortions are collectively referred to as Dysmnestic. Cognitive symptoms include a wide range of disturbances of psychic nature. The relation of these symptoms as a dreamy state, an intellectual aura, or a state of over-consciousness has been discussed in detail by Jackson.⁷

Affective symptoms are fear, anger and sometimes pleasure. One patient found to have an aneurysm overlying the superior surface of the temporal lobe experienced a complex intellectual aura consisting of hearing unidentifiable music causing a most pleasant feeling and associated with a visual hallucina-

tion of seeing into a dark tunnel with a white robed figure just out of the darkness beckoning to her with outstretched arms; a symptom complex reminiscent of a "near death" experience. That patient looked forward to those experiences and was unhappy when the seizures ceased following surgery for the aneurysm. Prince Mishkin, the epileptic autobiographical character in Dostoevsky's novel, *The Idiot*, observed that healthy people could have no idea of the happiness epileptics felt during the seconds before their seizures. Other affects include depression, erotic sensations, and indescribable sensations boding ill.

Illusions consisting of Micropsia or Macropsia and distortions of space and distance comprise a symptom complex often confused as psychiatric in origin.

Hallucinations may be well structured, like a frame from the movie of life, as described by one patient. These may be quite elaborate and multimodal. One patient described seeing herself with the foot of her child sticking out of her mouth. Except for a lateralized abnormal EEG consistent with an epileptiform abnormality, that patient would have unquestionably been a candidate for psychiatric treatment. Complex partial seizures differ from simple partial seizures in having alteration of consciousness. The complex partial seizure may begin with a simple partial seizure consisting of any of the events described above, and progress to include some impairment of consciousness. In some there may be only impairment of consciousness, and that raises an issue of differential diagnosis between a complex partial seizure, and a generalized seizure of the absence type. Automatisms may occur during the impaired consciousness of a complex partial seizure. These motor events may be so elemental as to include only smacking of the lips or primitive chewing movements or may be so elaborate as to include apparently purposeful motor activity which may be inappropriate. A perhaps apocryphal case report has an organist playing a processional hymnial hymn during a church service suddenly switch to pop-

ular music for some period and then without knowledge return to the processional where it was left off. A student of a law school was referred after a professor found his examination booklet to begin a sentence and persevere through the remainder of the book with a single word. The student had not reread his booklet and turned it in, apparently during the automatism. No one had observed unusual behavior and a neoplasm was discovered as the cause of the seizure.

A final class of partial seizures is that in which the partial seizure becomes secondarily generalized. The beginning may be a simple partial seizure or a simple partial seizure spreading to become a complex partial seizure and then a generalized seizure. A complex partial seizure may become secondarily generalized.

History and reliable witness observation are the best sources of information to assist in placing seizures in this classification. If those are not available intensive monitoring with video-EEG combinations will be helpful.

GENERALIZED SEIZURES (TABLE II)

Generalized seizures are those characterized by loss of consciousness at the onset of the ictal event. Motor disturbances are bilateral.

Absence seizures are those known as petit mal. These events are found in childhood and may consist of only a momentary state of less than fifteen seconds. In seizures of longer duration clonic motor components, and automatisms may occur. Such seizures raise the issue of complex partial seizures in the

TABLE II³
CLINICAL SEIZURE TYPES
GENERALIZED SEIZURES (CONVULSIVE OR NON-CONVULSIVE)

- A. 1. ABSENCE SEIZURES
 - A. IMPAIRMENT OF CONSCIOUSNESS ONLY
 - B. WITH MILD CLONIC COMPONENTS
 - C. WITH ATONIC COMPONENTS
 - D. WITH TONIC COMPONENTS
 - E. WITH AUTOMATISMS
 - F. WITH AUTONOMIC COMPONENTS
 - G. WITH COMBINATIONS OF A-F
- 2. ATYPICAL ABSENCE
 - A. CHANGES IN TONE MORE SEVERE THAN IN A-1-D
 - B. ONSET AND CESSATION NOT AS ABRUPT AS IN A-1.
- B. MYOCLONIC SEIZURES
- C. CLONIC SEIZURES
- D. TONIC SEIZURES
- E. TONIC-CLONIC SEIZURES
- F. ATONIC SEIZURES

UNCLASSIFIED SEIZURES

THOSE SEIZURES WHICH CANNOT BE CLASSIFIED DUE TO A LACK OF AVAILABLE DATA ON WHICH TO BASE A JUDGMENT. SOME POSSIBLY ICTAL EVENTS SUCH AS RHYTHMIC EYE MOVEMENTS, CHEWING MOVEMENTS AND SWIMMING MOVEMENTS PARTICULARLY IN NEONATES WILL RESIDE HERE UNTIL BETTER DATA ARE AVAILABLE.

differential diagnosis. A characteristic three Hertz spike and wave pattern, particularly during hyperventilation in the EEG is distinctive in absence seizures. Loss of muscle tone (Atony) and autonomic signs, or a mixture of those components, may be found in individual cases. Absence seizures may also be atypical in that the onset and cessation may not be so abrupt, and the seizure may be more intense. Such seizures also lack the characteristic EEG pattern and have other pattern differences.

Myoclonic seizures are characterized by brief rapid muscle jerks which may be single or multiple. These may be generalized or confined to face, limbs or trunk. Since myoclonus may occur outside the setting of an epileptic seizure it is important to distinguish myoclonic jerks arising from spinal cord dysfunction or myoclonus as a non-seizure symptom of a metabolic derangement or degenerative disease.

Tonic-clonic seizures are those typical grand mal seizures. These also present at times a challenge to the diagnosis of epilepsy versus pseudo-seizures. A grand mal seizure begins with loss of consciousness and excess muscle tone or rigidity in generalized distribution. The historical epileptic cry occurs as the result of air forced from the lungs in the phase of tonus. This proceeds to the clonic stage in which the clonus begins as a low amplitude quite rapid tremulousness and progresses to a high amplitude low frequency or slow jerk lasting until the patient becomes flaccid and enters the post ictal sleep phase, waking later and confused. Post ictal confusion is a most valuable clinical sign, and offers more solid evidence of a seizure than does urinary incontinence or biting of the tongue, events which may occur in syncope with a fall. Other generalized seizures include tonic seizures in which the patient is rigid and does not proceed to clonus. On the other hand some have no tonic phase and experience clonus only. In these clonic seizures there is no change of frequency and amplitude of the jerks as the seizure progresses,

and the post ictal period is brief. In some instances the seizure begins with a clonic phase and moves to a tonic phase before returning to clonus, thus a clonic-tonic-clonic seizure.

There is a variety of atonic or astatic seizure which occurs outside the age of the absence seizure and in which the EEG has no spike-wave abnormality, but rather a pattern of polyspikes with slow waves. These seizures are quite brief and are similar to the drop attack thought due to brainstem ischemia and the sudden loss of muscle tone as found in capaplexy.

If there is insufficient information available to classify the seizure event then there is the waste basket, unclassified. Such events as occur in the parasomnias of sleep disorders, and some of the events of the neonatal period such as swimming movements, twitchings and the like are perhaps seizures. Lacking the data to be sure, they are designated as unclassified until more complete data are available.

CLASSIFICATION OF EPILEPSIES AND EPILEPTIC SYNDROMES

In addition to classifying the seizure type there is a syndromic classification to consider. Using such a classification refines the process of clinical management, allowing grouping of patients whose prognosis is similar, whose seizures may derive from a common etiology, and who may respond to a particular form of therapy. Dreifuss has offered the analogy of each seizure type being one of the pigments on an artists's palette, with the other factors being additional pigments. The picture of the individual patient would be painted with the colors of the various pigments.

There are two distinctions in the grouping of epileptic syndromes; one is to reflect those seizures that are of focal origin as separate from those generalized at the onset. The second distinction is to separate those primary or idiopathic seizures from those secondary or symptomatic. The primary epilepsies are less likely to be related to other neurological dysfunction and are more likely to be found

without underlying pathological lesions. These are frequently familial, and demonstrate a normal EEG background between seizures. The secondary or symptomatic epilepsies are more likely to be associated with other neurological lesions, are more likely to have an underlying identifiable pathological process, and are more likely to demonstrate an abnormal EEG background between seizures. The term cryptogenic refers to epileptic syndromes thought to be associated with underlying pathology that is occult or hidden. While these are likely symptomatic, neither the cause nor the EEG characteristics are clear.

A classification of the epilepsies adapted from the International Classification of Epilepsies, epileptic syndromes, and related seizure disorders (ICES) is presented in Table III.

LOCALIZATION RELATED

Idiopathic (Primary) localization related epilepsies, benign childhood epilepsy with centrotemporal spikes, and those with occipital paroxysms reflect seizures that are brief, nocturnal, and occasionally become generalized. These generally begin between three and 13 years of age and have an excellent prognosis. Headaches of the migraine type may coexist. EEG evaluation is particularly important to establish the diagnosis since these seizures have characteristic patterns.

Localization related symptomatic epilepsies may be identified by the cerebral lobe of origin of the seizure. Temporal lobe seizures are the epitome of the complex partial or the psychomotor seizure class of the days in which grand mal, petit mal, Jacksonian and psychomotor seizures were the only four recognized. These consist of an aura (the simple partial seizure), an automatism of some sort and amnesia for the attack.

Frontal lobe epilepsies have a rich variety of clinical manifestations. There arise from the frontal lobe minor motor seizures (focal motor), versive seizures, automatisms, seizures with alteration of consciousness only

and so on.⁹

Parietal lobe seizures are unusual. Somatosensory symptoms, vertiginous sensations, and disruption of the sense of proprioception are possible. Penfield and Jasper¹⁰ described a patient who due to a cicatrix in the right parietal region experienced seizures beginning with an inability to concentrate and things looking "queer." That was followed by the patient seeing his left hand drifting downward followed by the sensation of "needles" in the left hand and the development of convulsive movements of the hand, that might progress to loss of consciousness and generalized convulsive movements. This represents a seizure beginning in the parietal lobe and spreading to the frontal lobe as a simple partial seizure before becoming secondarily generalized.

Occipital lobe seizures may present with simple visual symptoms such as flashes of light or may be an elaborate wheel of colored lights rolling across the visual field. If the seizure focus is closer to the memory areas of the temporal lobe visual memories and more elaborately formed experiences may be precipitated.

GENERALIZED EPILEPSIES AND SYNDROMES

IDIOPATHIC EPILEPSIES: Here are classified the febrile seizures of childhood, and the classical petit mal. Of some interest is juvenile myoclonic epilepsy with prominent upper extremity myoclonic jerks, occurring frequently on waking in the morning. A jittery feeling and incoordination accompany the myoclonus. The interest in this syndrome lies in its overlap with the syndrome of epilepsy with generalized tonic-clonic seizures on awakening. Further interest lies in the recent discovery of the association of this syndrome with a possible abnormality in Chromosome 6.¹¹

SYMPTOMATIC AND CRYPTOGENIC: Infantile spasm or the West syndrome is asso-

TABLE III^a
EPILEPSIES AND EPILEPTIC SYNDROMES

1. LOCALIZATION-RELATED (FOCAL, LOCAL, PARTIAL) EPILEPSIES AND SYNDROMES
 - 1.1 IDIOPATHIC EPILEPSIES
 - A. BENIGN CHILDHOOD EPILSPEY WITH CENTROTEMPORAL SPIKE
 - B. CHILDHOOD EPILEPSY WITH OCCIPITAL PAROXYSMS
 - C. PRIMARY READING EPILEPSY
 - 1.2 SYMPTOMATIC EPILEPSIES AND SYNDROMES
 - A. TEMPORAL LOBE EPILEPSY
 - B. FRONTAL LOBE EPILEPSY
 - C. PARIETAL LOBE EPILEPSY
 - D. OCCIPITAL EPILEPSY
 - E. CHRONIC PROGRESSIVE EPILEPSIA PARTIALIS CONTINUA
 - 1.3 CRYPTOGENIC EPILEPSIES (SAME AS ABOVE BUT CAUSE HIDDEN)
2. GENERALIZED EPILEPSIES AND SYNDROMES
 - 2.1 IDIOPATHIC EPILEPSIES
 - A. BENIGN FAMILIAL CONVULSIONS
 - B. BENIGN NEONATAL CONVULSIONS
 - C. BENIGN MYOCLONIC EPILEPSY IN INFANCY
 - D. CHILDHOOD ABSENCE EPILEPSY
 - E. JUVENILE ABSENCE EPILEPSY
 - F. JUVENILE MYOCLONIC EPILEPSY
 - G. EPILEPSY WITH GENERALIZED TONIC-CLONIC SEIZURES ON AWAKENING
 - H. OTHER IDIOPATHIC GENERALIZED EPILEPSIES
 - 2.2 SYMPTOMATIC AND 2.3 CRYPTOGENIC EPILEPSIES
 - A. INFANTILE SPASMS (WEST SYNDROME)
 - B. LENNOX-GASTAUT SYNDROME
 - C. MYOCLONIC EPILEPSIES OF INFANCY AND CHILDHOOD
 - D. METABOLIC AND OTHER DISEASES WITH SEIZURES AS A PREDOMINANT SYMPTOM
3. EPILEPSIES NOT CLEARLY FOCAL OR GENERALIZED
 - 3.1 EPILEPSIES WITH BOTH FOCAL AND GENERALIZED SEIZURES
 - A. NEONATAL SEIZURES
 - B. SEVERE MYOCLONIC EPILEPSY IN INFANCY
 - C. EPILEPSY WITH SPIKE-WAVE DURING SLEEP
 - D. ACQUIRED EPILEPTIC APHASIA (LANDAU-KLEFFNER SYNDROME)
 - E. OTHER UNDETERMINED EPILEPSIES
 - 3.2 EPILEPSIES WITH SEIZURES NOT CLEARLY FOCAL OR GENERALIZED
 - A. EPILEPSY WITH GENERALIZED SEIZURES DURING SLEEP
4. SPECIAL SYNDROMES WITH SITUATION-RELATED SEIZURES
 - A. FEBRILE SEIZURES
 - B. ALCOHOL-RELATED SEIZURES
 - C. SEIZURES ASSOCIATED WITH METABOLIC DERANGEMENT (ECLAMPSIA, HYONATREMIA, HYPERGLYCEMIA, ETC.)
5. SPECIAL SYNDROMES WITH SEIZURES PRECIPITATED BY SPECIFIC STIMULI (MUSICOGENIC EPILEPSY, READING EPILEPSY, ETC.)

ciated with an EEG abnormality known as Hypsarrhythmia. Clinical manifestations include salaam or jackknifing flexion of the head, trunk and extremities.

The Lennox-Gastaut Syndrome occurs in children of one to about eight years and is associated with tonic, atypical absence, myoclonic, occasional tonic-clonic seizures and rarely partial seizures. These seizures are difficult to control and episodes of status epilepticus are frequent. In slightly more than half the cases there is a history of some previous CNS difficulty. The others are primary.

Other syndromes are divided on the basis of whether or not there is a relationship with another disease, or whether or not the seizure features are clearly defined, or on the basis of the EEG pattern.

The advent of the Epileptologist, the increasing sophistication of monitoring equipment, the precise ability to locate and surgically remove epileptogenic lesions, and the increasing quality of available medications to control seizures bode well for the patient with epilepsy. A poll of physicians¹² investigating their perspectives of epilepsy revealed that one quarter of those treating epilepsy were inadequate by their own admission. The inadequacies covered a spectrum including knowledge of diagnosis, evaluation of the patient, therapy and the physician's attitude about the illness. Special issues of *The SCMA Journal* such as this should go a long way to assure that the physicians in South Carolina need not be counted among those inadequate in the management of a patient with epilepsy. □

REFERENCES

1. Temkin O. The doctrine of epilepsy in the Hippocratic writings, Bull. Inst. Hist. of Med., Vol. 1: 277-322, 1933.
2. Gastaut H. Clinical and El; Electroencephalographic classification of epileptic seizures. *Epilepsia* Vol. 11: 102, 1970.
3. Commission on Classification and Terminology of the International League Against Epilepsy. Proposal for revised clinical and electroencephalographic classification of epileptic seizures. *Epilepsia*, Vol. 22: 489-501, 1981.
4. Commission on Classification and Terminology of the International League Against Epilepsy. Proposal for revised classification of epilepsies and epileptic syndromes. *Epilepsia*, Vol. 30: 389-399, 1989.
5. Psychical Seizures, Chapter 11 in: Penfield and Jasper ed. *Epilepsy and the functional anatomy of the human brain*, Boston, Little, Brown and Co., 1954.
6. Daly D. Ictal clinical manifestations of complex partial seizures, in: Penry and Daly ed. *Complex-Partial seizures and their treatment*, *Advances in Neurology* Vol. 11, New York, Raven Press, 1975.
7. Jackson, H. On a particular variety of epilepsy ("Intellectual Aura") in: *Selected writings of John Hughlings Jackson* Vol. 1. Taylor JH.; London, Hodder and Stoughton, 1931, Reprinted by the Classics of Neurology and Neurosurgery Library, Birmingham, 1985.
8. Drefuss FE. The Epilepsies: Clinical implications of the international classification; *Epilepsia*, Vol. 31 (Suppl. 3): S3-10, 1990.
9. Geir S, Bancaud J, Talairach J, et. al. The seizures of frontal lobe epilepsy: A study of clinical manifestations. *Neurology (Minneapolis)*, 1977, Vol. 27: 951-958.
10. Electrocorticography, Chapter XVII in Penfield and Jasper ed. *Epilepsy and the functional anatomy of the human brain*. Little, Brown and Company, Boston, 1954.
11. Greenburg DA, Delgado-Escueta AV, et. al. Segregation analysis of juvenile myoclonic epilepsy. *Genet Epid*, 1988; Vol. 5: 81-94.
12. Beran, RG, Jennings, VR, Read, T. Doctor's perspectives of epilepsy, *Epilepsia*, Vol. 22: 397-406, 1981.

CURRENT STRATEGIES IN THE MEDICAL MANAGEMENT OF EPILEPSY*

PAUL GURECKI, M. D.

BRAXTON B. WANNAMAKER, M. D.**

JOHN PLYLER, M. D.

INTRODUCTION

Medical therapy remains the cornerstone of treatment in epilepsy. Approximately 50 percent of patients with epilepsy can be rendered seizure-free and another 20 percent can be made substantially better. To achieve these levels of success, therapy requires understanding of certain clinical pharmacological principles as well as a clear understanding of the nature of epilepsy and of the seizures which accompany the epilepsy.

Epilepsy has been treated for over three thousand years. Therapy and prognosis are described in tablets which are over three thousand years old. The use of bromides was a deliberate effort to improve control of seizures and ushered in modern pharmacological therapy with antiepileptic drugs in 1857. Subsequent improvement was seen in 1915 with the use of phenobarbital. This discovery was followed approximately twenty years later by the introduction of phenytoin by Putnam and Merritt. The "new" drugs were introduced in the late 1940s and early 1950s. The different classes of drugs included oxazolinediones (trimethadione), succinimides (ethosuximide), and pyrimidine-dione (primidone). Additional advances were made in the 1960s and 1970s with the introduction of benzodiazepines, carbamazepine and valproic acid into this country. Fortunately, there are three new agents that have pending FDA

applications for antiepileptic drug therapy.

In this article, we provide an overview of principles of antiepileptic drug therapy and describe appropriate treatment in selected situations.

DECISION TO TREAT

The clinician should decide first of all if there is a significant risk that an epileptic seizure will recur before prescribing medication. Generally, the use of antiepileptic drugs requires a longterm commitment and will expose a patient to some inherent risks. There are certain situations, such as the sleep deprivation-fatigue syndrome where the removal of the offending process (sleep deprivation and fatigue) will result in the appropriate treatment of a seizure problem. No medications are required. It is currently held that febrile seizures need not be treated. Seizures secondary to alcohol withdrawal do not require longterm antiepileptic drug therapy.

Other situations are less clear. The healthy individual without obvious etiology for the occurrence of a single seizure often presents a dilemma. The current data indicate that the individual who has a normal neurological exam, a normal EEG, and is otherwise healthy, has an approximate 50 percent chance of not having a subsequent seizure. Many factors must be weighed into that decision and it is beyond the scope of this article to discuss that.

Once that it is decided that the patient should be treated, the type of seizure and syndrome should be clearly defined. The currently available antiepileptic drugs do have some specificity for their best usages. Further, there

*From the Roper Hospital Epilepsy Unit and the Department of Neurology, Medical University of South Carolina, Charleston; Charleston Epilepsy Program.

**Address correspondence to: Braxton B. Wannamaker, MD, 125 Doughty Street, Suite 460, Charleston, SC 29403.

are some untoward side effects that are especially disconcerting and have a somewhat higher risk, depending on age and general condition of the patient. In general, carbamazepine and phenytoin are the appropriate drugs to use in those patients with partial epilepsies.

Those patients who have primary generalized epilepsies, including absence, primary generalized tonic-clonic seizures and myoclonic seizures respond best to valproic acid. These three drugs are selected primarily because of their greater efficacy and because of their tendency to have fewer side effects than more sedating drugs, such as benzodiazepines, phenobarbital and primidone.

CLINICAL PHARMACOLOGY

The goal of antiepileptic therapy is to achieve a freedom from seizures and at the same time avoid side effects from these medications. To accomplish this task, an understanding of the pharmacological concepts related to these drugs is required. The primary concepts involve: (1) half-life; (2) volume of distribution (including drug binding); (3) metabolic disposition of the drug; and (4) analysis of antiepileptic drug levels in body fluids.

Half-life. Each drug has a relatively consistent characteristic by which one can predict the rate of elimination of that drug. That particular characteristic which gives the time required for 50 percent of the concentration of that drug to decline is termed the half-life. This phenomena provides some reflection about the elimination of the drug. It is important to realize that the half-life is variable from individual to individual and is a variable dependent upon drug clearance and volume of distribution.

The initial prescription for the dosing of an antiepileptic drug is empirical. However, if we know the half-life for a particular antiepileptic drug, we should initially administer the drug so that the dose is given within one half-life period. It is known that five half-lives are required to establish a steady state

with any of these drugs, and this will be reflected by a constant plasma level.

Phenytoin provides an example of these different concepts. The average half-life for phenytoin is 24 hours. Phenytoin can be given in a once per day dosing schedule. If continued daily dosing is maintained, a steady state is achieved with five days. In some patients, phenytoin will have a half-life which is less than 24 hours (for instance, 18 hours). Thus, if the total daily dose is given beyond that time, one will have difficulty achieving and maintaining an appropriate steady state level. A twice per day dosing schedule is often the safest initial prescription. Clinical experience with the individual patient will guide alternative dosing schedules.

Volume of distribution. Once the antiepileptic drug has been absorbed, it enters the circulation and is distributed throughout the body in plasma and in extravascular spaces. In the simplest concept, the volume of distribution is an apparent volume of body fluid in which the drug would be distributed at a concentration equal to that of blood. It is the ratio of the amount of drug in the body to the blood concentration at any time. Antiepileptic drugs are widely distributed with some selective accumulation in various organs, depending on the drug. The drugs are bound to proteins (primarily albumin) in the plasma. The antiepileptic drugs, with the exception of ethosuximide and primidone, are highly protein bound. Carbamazepine is 73 to 88 percent bound, phenytoin is 85 to 93 percent bound, valproic acid is 70 to 95 percent bound, and phenobarbital is 45 to 55 percent bound.

Protein binding is proportional to the albumin concentration. In some situations, such as hypoalbuminemia, there is a higher fraction of unbound drug. It is this unbound drug that is bioactive and responsible for the desired effect or toxic side effects. When there is a higher fraction of unbound drug, there is also more drug available for clearance. In that sit-

uation, the total concentration of drug in the plasma may be reduced, but the bioactive concentration will remain stable.

In special situations, management is very important with reference to drug binding. In patients who are very young or very old, the albumin may be low or of a different quality and thus the unbound portion of the drug may be greater. Smaller total concentrations of the drug are required to achieve desired effects. In the patient with liver disease, acute head trauma or spinal cord injury, resulting changes in protein concentration may occur. Plasma albumin levels become a very important pharmacological consideration.

Drug-drug interactions may occur at the plasma protein binding sites. Examples include displacement by administration of aspirin in patients who are taking valproic acid. Higher levels of free fatty acids may also displace drugs from the binding proteins. Special situations, as febrile illness, are seen in which alpha 1-acid glycoprotein increases and binds carbamazepine and hence may lower the unbound fraction available for the desired biological effect.

Metabolic distribution of drug. Most antiepileptic drugs are metabolized by microsomal enzyme systems in the liver. In the naive patient, these enzyme systems must be "kicked on" or induced to metabolize drugs. Thus, in the naive patient, initial doses of drugs must be low or the patient will become toxic. The process of induction usually resolves and leaves a steady metabolic state. At times, this process continues and there is further induction of the microsomal enzymes. This will lead to continued lowering of plasma levels and requirements for increasing doses of the drug or of those inducing co-medications.

Whereas some drugs, such as carbamazepine, undergo autoinduction, other drugs, as phenytoin, may inhibit its metabolism as drug levels increase. The latter phenomena dictates careful and very small dosing increases when attempts are made to

change phenytoin levels from the low or mid-therapeutic ranges to slightly higher levels.

Antiepileptic drugs are metabolized to both stable and unstable intermediates. Some metabolites are significant for their potential toxicity and others for their possible efficacy as an active drug. Phenytoin, for instance, may be oxidized to an unstable metabolite, arene oxide, which may be a source of potential toxicity, especially when considering teratogenicity. Carbamazepine is metabolized to carbamazepine 10,11-epoxide which is stable and contributes to its overall antiepileptic activity as well as to its toxicity. Intermediate compounds are produced during valproic acid metabolism. It is held that 2-en-valproic acid has anticonvulsive properties and that the 4-en-valproic acid contributes to hepatotoxicity.

The clearance of some of these drugs may be influenced by the state of health of the patient. Conditions as diarrhea, constipation, renal impairment, hepatic disease and pregnancy may have some bearing on drug clearance. The pregnant patient presents a very complex situation of increased body weight, increased circulating blood volume and cardiac output, decreased serum protein binding and increased renal perfusion. Immunizations in children, as well as febrile illnesses may increase elimination because of transiently induced metabolism. In many of these situations, it is important to increase dosage and shorten the interval between doses, so that therapeutic levels are maintained.

Analysis of antiepileptic drug levels.

Antiepileptic drug levels in plasma or serum are easily obtained today. For the most part, they are performed with a high degree of specificity and accuracy through standardized techniques and good quality control. The results reflect the total plasma concentration. A special request is necessary to obtain free levels and these are done only in specialized laboratories. In the majority of circumstances, a total plasma level is sufficient to guide the physician in prescribing. Unfortunately, some laboratories and some physicians equate

"therapeutic ranges" with levels appropriate for therapeutic efficacy. Therapeutic ranges reflect statistical analyses of groups of patients. Individual patients may be adequately controlled at levels below those reported as therapeutic; similarly, some patients with plasma levels above the therapeutic range do not become toxic. These reported therapeutic ranges must be viewed only as guidelines for therapy and not absolute boundaries.

The frequency for obtaining antiepileptic drug levels (AEDLs) is dependent on the patient's condition. Those outpatients actively having seizures warrant AEDLs on a routine monthly or quarterly basis. When antiepileptic drugs are changed and a new regimen is established, baseline antiepileptic drug levels should be drawn. Patients who have been well controlled, but have breakthrough seizures should have antiepileptic drug levels promptly. For the patient who is seizure-free beyond one or two years, AEDLs are recommended on a six to twelve month basis. For reasons of noncompliance or changing drug clearance, drug levels may fall or rise insidiously. Routine surveillance is important. Routine antiepileptic drug levels are often educational for both patient and physician.

ANTIEPILEPTIC DRUGS

Three antiepileptic drugs, carbamazepine, phenytoin and valproic acid are set apart from the currently available 16 antiepileptic drugs because of the indications and frequency of use, efficacy, and safety. Each drug, however, has very unique properties that must be recognized to use it properly.

Carbamazepine. The initiation of therapy with carbamazepine must be accomplished slowly. Liver enzyme induction is required before full doses can be tolerated. Carbamazepine absorption is often slow and erratic. The rate of absorption, however, may be greater in patients with epilepsy than in volunteers. The time to peak absorption is generally four to eight hours, but may range to 26 hours. Absorption can be delayed by taking

this medication with meals and thus avoid the sometimes observed diplopia that follows within two to four hours of dosing and is, in general, associated with a peak plasma level. The anticholinergic properties of the drug may modify pupillary function and cause the "blurred vision". Carbamazepine may later induce its own metabolism (autoinduction), such that one has to play a game of catch-up with the dosing. This typically occurs after about the third or fourth week of utilization of the medication. Obtaining a follow-up drug level at this time can often be helpful in avoiding an insufficient level of drug. A plateau is observed beyond which the plasma concentration will not increase, despite increasing doses of carbamazepine.

The biotransformation of carbamazepine results in the production of a stable intermediary, carbamazepine-10,11-epoxide. This compound has antiepileptic properties. Its concentration in plasma is about 10 percent of that of the parent compound. However, with co-medication, the intermediary may reach 20 percent of the plasma concentration of the parent compound. Improved seizure control or toxicity may result. When medicines are co-administered, it may be unnecessary to increase the dose of the parent compound and achieve the usual high levels of the parent compound because the intermediary is active.

In general, other antiepileptic drugs induce the metabolism of carbamazepine. Erythromycin and propoxyphene are known to inhibit the metabolism of carbamazepine. Toxicity caused by this drug-drug interaction is not uncommon.

Phenytoin. Capsules of phenytoin are the most common formulation and provide peak absorption within three to nine hours with extended peaks to 48 hours. This drug can be given intravenously and thus becomes very important in emergency situations or in those situations where patients cannot receive antiepileptic medications by mouth. Phenytoin should not be given intramuscularly. A

new formulation, prophenytoin, has been developed and is water soluble. It can be given intramuscularly or intravenously. It will probably not result in the usual vein irritation of sodium phenytoin given intravenously. Trials with this drug are not yet complete, but it may serve as an important advance in the special situation usage of phenytoin in the future.

Phenytoin is highly protein bound and as such is especially subject to variation by low serum albumin or by uremia. Situations of low albumin are discussed above. In patients with uremia, the free fraction of phenytoin in the plasma is increased. Thus, a somewhat lower total plasma level (which is usually the reported level) is all that is required to achieve seizure control. Total plasma levels in the range of 8 to 12 micrograms per ml are generally sufficient in the patient with notable uremia. If difficulties arise, a free drug level can be exceedingly helpful.

Phenytoin is not always an easy drug to manage. This drug follows first order kinetics when plasma levels are low, but subsequently its enzyme system becomes saturated and zero order kinetics occur.

There is a narrow range for this transition zone and it is very easy for patients to become toxic while on phenytoin. Incremental increases to achieve changes in plasma levels between 10 to 20 micrograms per ml should be carried out with very small doses of phenytoin. Twenty-five mg tablets and 30 mg capsules are available and these formulations can be helpful. Alternate day additions can also be effective for some small increases, depending on the patient.

There are over 100 compounds that interact with phenytoin. Phenytoin metabolism may be increased by antiepileptic drugs (carbamazepine, diazepam, and phenobarbital). Inhibition of phenytoin metabolism can occur as a consequence of phenobarbital as well. Lower levels of phenytoin may be observed when valproic acid is co-administered. This change occurs as a consequence of competition for drug bindings sites on protein and subsequent increased clearance of phenytoin.

Non-antiepileptic drugs which interact, increase (inhibit metabolism) phenytoin levels may include isoniazid, cimetidine, and disulfiram. The majority of other interactions result in a lowering of phenytoin or in a variable effect on phenytoin levels.

Valproic acid. Valproic acid (VPA) is essentially 100 percent absorbed throughout the GI tract. The rate of absorption is very dependent on the dosage form. The most widely used formulation is disodium valproex presented as an enteric coated tablet. A peak absorption time is three to eight hours. The biotransformation of valproic acid is very complex and involves at least five different metabolic pathways. It is important to appreciate that several of its intermediaries are stable and bioactive. Notably, the 2-en-VPA metabolite has antiepileptic properties. This metabolite accumulates slowly. The full therapeutic effectiveness of valproic acid may not occur for six weeks. The 4-en-VPA metabolite appears to be both embryotoxic and hepatotoxic. The presence of these two metabolites is increased with co-administration of carbamazepine.

The pharmacokinetics of valproic acid are non-linear and dose dependent. Valproic acid levels begin to plateau at higher doses of this drug. There is an increased volume of distribution due to increases in the free fraction of this drug with increasing doses. The plasma levels of valproic acid are also dependent on plasma concentrations of albumin and follow a more-or-less direct relationship revealing lower levels with reduced plasma albumin concentrations. Interestingly, plasma levels of valproic acid show diurnal changes with lower levels during the night. The reasons for these changes are not clear. Frequent seizures at night might require obtaining nighttime plasma levels rather than basing therapy on usually obtained daytime plasma levels.

The drug-drug interactions for valproic acid are much fewer than for carbamazepine or phenytoin. The clearance of valproic acid is increased by carbamazepine, phenobarbital, phenytoin and primidone. Aspirin or fatty

acids may increase the free levels of valproic acid by directly competing for drug binding sites. Valproic acid is a metabolic inhibitor of the metabolism of some drugs. There appears to be a preferential interaction for a carbamazepine-10,11-epoxide as opposed to its parent compound. Valproic acid inhibits the epoxide hydrolase which inactivates the epoxide. This may result in an increase of the epoxide without an apparent change in the carbamazepine.

Drug selection. Carbamazepine and phenytoin are the drugs of choice for partial seizures which are secondarily generalized. Primary generalized epilepsies are best treated with valproic acid. Several exceptions to these generalizations are worth mentioning. Carbamazepine or phenytoin may work well for primary generalized tonic-clonic seizures. Ethosuximide is an appropriate drug for true absence epilepsy. Valproic acid is a very helpful adjunct drug in partial seizures. The benzodiazepines may be effective in the idiopathic or symptomatic generalized epilepsies with multiple seizure types, astatic seizures in Lennox-Gastaut syndrome or infantile spasms of West syndrome. Aside from drug indication by seizure type, a primary determinant in whether an antiepileptic drug is effective often boils down to untoward reactions experienced by the patient. The VA Cooperative Study in 1985 was a multi-center study, the results of which indicated that carbamazepine was the drug of choice for complex partial seizures. However, in that study, there was no difference in the efficacy of carbamazepine, phenytoin or primidone. The latter two drugs, however, were less well tolerated by patients and changes to carbamazepine were sometimes undertaken for those reasons.

Drug reactions. Eventually, all patients who take antiepileptic drugs experience side effects at one time or another. The majority of instances of side effects are reversible and easily managed if one keeps in mind those general principles of antiepileptic drug use.

Drug reactions occur as untoward reactions, idiosyncratic responses, and longterm side effects. Untoward drug reactions are basically related to elevation of drug levels beyond a tolerable level. The symptoms are common to most of the antiepileptic drugs and offer little specificity. Ataxia, nystagmus, and slurred speech are common with phenytoin, phenobarbital, or primidone, but may also be seen with carbamazepine. Drowsiness is a side effect expected of phenobarbital or primidone, but may also be seen when patients are taking carbamazepine or valproic acid. These commonly observed side effects are dose related and can be ameliorated by lowering the doses of medications. These drug reactions may occur as a consequence of drug-drug interactions.

One must remain cognizant of the stable and active metabolites which can also cause side effects and are not always reported with routine blood level analyses. Notable in this group are phenobarbital derived from primidone and carbamazepine-10,11-epoxide derived from carbamazepine.

The second form of drug reaction is idiosyncratic. These are the unexpected reactions and include drug rash, leukopenia, aplastic anemia, exfoliative dermatitis (Stevens-Johnson syndrome), and hepatopathy. These reactions are not dose related. These reactions are reversible in most instances by withdrawal of the medication.

Chronic antiepileptic drug toxicity may affect multiple organs. This form of toxicity is often very subtle and difficult to appreciate. One may see impairment in cognitive skills. Personality or behavioral changes may also occur and include depression. Longterm administration of antiepileptic drugs can reduce the levels of hormones necessary to maintain bone structure and result in osteoporosis. The development of coarse skin features, megaloblastic anemia and peripheral neuropathy may all occur. Some of these side effects are reversible, but require manipulation of metabolic substrates as well as manipulation of drug regimen and supplementation

with vitamins and minerals.

SPECIAL SITUATIONS

There are various situations in which the treatment of epileptic seizures and related conditions require special manipulation of antiepileptic drugs, an understanding of the natural history of certain problems, and an awareness of various physiological changes.

Febrile seizures. The current strategy in the management of febrile seizures is to avoid antiepileptic drug treatment. Febrile seizures have been shown to occur frequently in our population. This is a generally well-defined group of patients who are otherwise normal and frequently have a positive family history. The outcome for normal development and cognitive skills following febrile seizures is not different than that of the normal population without febrile seizures. Even in those children who have status epilepticus associated with febrile seizures, the longterm prognosis for development is good. There are concerns that the prophylactic treatment of febrile seizures is inefficient and that the use of medications in these children is potentially harmful.

Pregnancy. Women with epilepsy most frequently have normal, healthy babies. Careful consideration must be given to the planning of the pregnancy and the regulation of antiepileptic drugs well in advance of the pregnancy. The major considerations around the childbearing woman with epilepsy includes teratogenicity of antiepileptic drugs, the effect of the epileptic seizures on the fetus, and the effect of the pregnancy on seizure control.

With the exception of trimethadione, there is currently no substantial evidence that shows that any one drug has more or less teratogenicity than the others. There is a slight exception with carbamazepine and valproic acid which are known to have a slight increased risk of neural tube defects. There is clear correlation of fetal malformation associ-

ated with increasing multiplicity of antiepileptic drugs. Thus, the first endeavor is to plan a pregnancy with the fewest possible antiepileptic drugs that will control the patient's seizures. In patients who have been difficult to stabilize and who find that the best drug for their seizures might include carbamazepine or valproic acid, there is little benefit in changing them to another antiepileptic drug. The risk of fetal malformation with the use of the drugs adds only one percent to the overall risk. The overall risk of fetal malformation is two to three times that of the non-exposed population, but this value is still at approximately six percent versus two to three percent for the nonexposed population. An alternative vantage point is that one may anticipate a 94 percent good outcome.

The patient with epilepsy most often has no change in the seizure frequency during pregnancy. A small percentage of patients will deteriorate. There are a few patients who even seem to function better during the pregnancy.

During pregnancy, the antiepileptic drug levels decline due to increased hepatic blood flow and decreased absorption of drug. Monthly examination of the antiepileptic drug levels after the first trimester and subsequent adjustment of the drug may avoid breakthrough seizures.

One might expect fetal distress with isolated convulsive epileptic seizures. However, the data is not totally clear on this issue. One would expect that there would be major implications following status epilepticus. Seizures at the time of delivery could also be quite hazardous. Patients with active epilepsy who plan a pregnancy should not be withdrawn from medical therapy.

Status epilepticus. Status epilepticus is a life-threatening situation. An ongoing collaborative project of all physicians in the greater metropolitan Richmond, Virginia area has revealed the morbidity of status epilepticus to be around 30 percent. It has also been found in this particular study that status epilepticus

is probably underdiagnosed.

Status epilepticus should be treated early and aggressively. Part of the problem with morbidity in status epilepticus relates to the systemic effects of status epilepticus on the cardiovascular system. The ABCs of emergency care should be applied such that patients are maintained with appropriate airway, blood oxygenation, and a stable cardiovascular system. The seizures require immediate treatment. This is accomplished with either diazepam or lorazepam. The latter has been demonstrated to have a longer duration of action than diazepam and some believe it to be preferred. Neither of these drugs is adequate for longterm prophylaxis of seizures. Thus, at the same time that immediate anticonvulsive therapy is given, the administration of longterm prophylaxis should begin. This is best accomplished with intravenous phenytoin. Phenobarbital is an acceptable alternative if the patient cannot tolerate phenytoin. These medications should be administered regardless of the currently prescribed prophylactic regimen. Most often, those drugs will be at a low plasma concentration and even if in a therapeutic range additional drugs will not create a significant problem by causing a transient "toxic" level.

The recurrence of seizures in the treatment of status epilepticus or serial seizures most often occurs because of inadequate initial dosing. Thus, maximal doses of diazepam or lorazepam should be given. Phenytoin must be infused at 18 to 20 milligrams per kg with a goal of achieving plasma levels of approximately 22 to 25 micrograms per ml. Caution should be exercised in the immediate administration of these drugs such that respiratory distress secondary to benzodiazepines (especially in the face of barbiturates) can be handled immediately. The intravenous infusion of phenytoin must be performed slowly so that its diluent does not cause hypotension. This is especially a problem in the elderly or the acutely ill patient. The full antiepileptic effect of phenytoin may be delayed one to two hours after infusion of the loading dose.

A thorough search for the cause of the status epilepticus must be undertaken. Frequently, drug withdrawal is the problem. Infectious disease is probably the second leading cause of status epilepticus. Treatment of the precipitating causes or illnesses will go hand in hand with the treatment of the seizures. One must also search for associated injuries and aspiration that may have occurred with the status epilepticus.

MEDICATION WITHDRAWAL

The initiation of an antiepileptic drug is often followed by the familiar question by patient or family, "How long will I have to take this medication?". This is a realistic question which at times can be effectively answered and at other times not answered at all. There are selected epileptic syndromes which allow us to provide clear prognoses for medication response and for medication withdrawal and seizure remission. Those children who develop benign partial seizures with centrottemporal spikes most often have an excellent outcome for seizure control with antiepileptic drugs. Additionally, it is our experience that these patients may be taken off medication in about three or four years after diagnosis. This, of course, depends on how well the seizures are controlled. Further, these patients are unlikely to have seizures in adulthood. Children who develop absence epilepsy without any generalized tonic-clonic seizures or stigma of underlying neurological disease will require medication for three to four years and, in general, will then become seizure-free without medication. The patient with juvenile myoclonic epilepsy has an approximately 90 percent remission rate while on medication, but also has a 90 percent relapse rate while off medication. That individual will probably require medication on a lifelong basis. In contrast to the good outcomes, patients with symptomatic partial epilepsies generally have a poor prognosis for seizure control and remission of seizures without drugs. The five year remission rate of complex partial seizures with therapy is approximately 20

percent. Other situations become less clear. Some generalizations are helpful. The patient with very few seizures and who is otherwise normal, has a normal EEG and has responded well to medication may have a good prognosis. If that individual remains seizure-free for two years, drug withdrawal could be considered. Patients with idiopathic or cryptogenic epilepsies would be expected to have a better prognosis than those with symptomatic epilepsies.

SUMMARY

Epilepsy is a fascinating disorder reflective of ongoing brain activity which at times is disordered. There have been significant advances in the understanding of the pharmacology of antiepileptic drugs such that effective treatment is feasible. Understanding the epilepsies and the phenomena of epileptic seizures will permit one to successfully deal with the major issues around these syndromes and lead to a very rewarding outcome. □

SELECTED REFERENCES

1. Chadwick D. The discontinuation of antiepileptic drug therapy. In: Pedley TA, Meldrum BS, eds. Recent advances in Epilepsy. Edinburgh: Churchill Livingstone, 1985;2: 111-124.
2. Cloyd J. Pharmacokinetic pitfalls of present antiepileptic medications. *Epilepsia* 32:553-565, 1991.
3. Commission on classification and terminology of the International League Against Epilepsy: proposal for revised clinical and electroencephalographic classification of epileptic seizures. *Epilepsia* 22:489-501, 1981.
4. Commission on classification and terminology of the International League Against Epilepsy: proposal for revised classification of epilepsies and epileptic syndromes. *Epilepsia* 30:389-399, 1989.
5. Dam M, Gram L, eds. *Comprehensive Epileptology*. New York: Raven Press, 1991.
6. Dreifuss FE, Langer DH. Side effects of valproate. *Am J Med* 84:34-41, 1988.
7. Farwell JR, Lee YJ, Hirtz DG, et al. Phenobarbital for febrile seizures - effects on intelligence and on seizure recurrence. *N Eng J Med* 322: 364-369, 1990.
8. Hopkins A, Garman A, Clarke C. The first seizure in adult life. *Lancet* 1:721-726, 1988.
9. Levy RH, Dreifuss FE, Mattson RH, et al., eds. *Antiepileptic Drugs* 3rd Edition. New York, Raven Press, 1989.
10. Mattson RH, Cramer JA, Collins JF, et al. Comparison of carbamazepine, phenobarbital, phenytoin, and primidone in partial and secondarily generalized tonic-clonic seizures. *N Eng J Med* 313:145-151, 1985.
11. Maytal J, Shinnar S. Febrile status epilepticus. *Pediatrics* 86:611-616, 1990.
12. Maytal J, Shinnar S, Moshe SL, Alvarez LA. Low morbidity and mortality of status epilepticus in children. *Pediatrics* 83:323-331, 1989.
13. Milunsky A. Multivitamin/folic acid supplementation in early pregnancy reduces the prevalence of neural tube defects. *JAMA* 262:2847-2852, 1989.
14. National Institutes of Health. Febrile seizures: Consensus Development Conference summary. Bethesda MD: National Institutes of Health, 1980: Vol 3, No.2.
15. Pedley TA. Discontinuing antiepileptic drugs. *N Eng J Med* 318:982-984, 1988.
16. Schmidt D. Adverse effects of antiepileptic drugs. New York: Raven Press, 1982.
17. Wyllie E, Wyllie R. Routine laboratory monitoring for serious adverse effects of antiepileptic medications: The Controversy. *Epilepsia* 32:574-579, 1991.

INTENSIVE NEURODIAGNOSTIC MONITORING*

PAUL B. PRITCHARD III, M. D.**

The primary purposes of intensive neurodiagnostic monitoring are to confirm or reject the diagnosis of epilepsy in the patient suspected to have epilepsy and to classify the type(s) of his epileptic seizures. Intensive monitoring is reserved for those cases in whom conventional diagnostic methodology fails to achieve precise diagnosis or when therapeutic intervention fails to achieve optimal results.

The information derived from a successful monitoring session should exclude other paroxysmal disorders such as syncope and the parasomnias.¹ Also to be excluded are behavioral disorders which generate non-epileptic attacks: events which are phenotypically similar to epileptic seizures but which do not have an epileptogenic basis. In a given case, more than one type of paroxysmal event may be discovered. For instance, many epileptic syndromes include more than one type of epileptic seizure.² In addition, non-epileptic and epileptic seizures may coexist, presenting formidable diagnostic and therapeutic challenges to the clinician.

Data which assist in diagnosis include continuous video recording of clinical/behavioral events, simultaneously recorded electroencephalogram (EEG), serial measurements of serum levels of antiepileptic drugs (AED's), and neuroendocrine data. This paper will address means by which these data can be recorded and analyzed.

THE MONITORING UNIT

The intensive neurodiagnostic monitoring unit is usually located in a hospital setting if

continuous monitoring is to be accomplished on a 24 hour per day basis. Short term recordings can be done on an outpatient basis in an EEG laboratory modified for the purpose. Essential equipment includes video cameras and recorders, video monitors which are accessible to monitoring personnel (Figure 1), and EEG recording equipment. In some cases, the EEG signals are recorded remotely by telemetry, permitting more physical freedom to the patient. EEG data may be preserved on paper, through FM tape recordings, or through split screen video recording of clinical and EEG events (Figure 2).³ In any case, a system is devised to allow correlation between behavioral and EEG events at the time of analysis.

Seizure detection is crucial to analysis of clinical events and is accomplished by several independent means in most cases. The patient keeps a bedside log of events which he considers typical of his seizures, and the monitoring staff record events which they note. In some units, on-line analysis of EEG data yields automatic detection of epileptogenic potentials during the monitoring session, and alarms alert the staff of the need for immediate surveillance of the patient for any related change in his status.

ANALYSIS OF CLINICAL EVENTS

Monitoring of clinical events continues until a sufficient number of adequately recorded episodes are available for analysis. Capturing an adequate number of attacks may be facilitated in some cases by discontinuing or reducing antiepileptic drugs prior to admission and during the recording session. Having family or other eyewitnesses review the videotaped episodes is prudent to assure that the recorded events are representative of the

* From the Roper Hospital Epilepsy Unit, Charleston, SC; Charleston Epilepsy Program.

** Address correspondence to Dr. Pritchard at 125 Doughty St., Suite 460, Charleston, SC 29403.



Figure 1. A member of the Roper Epilepsy Unit monitoring staff observes patient monitors during an intensive monitoring session.

attacks in question. In most cases, it is appropriate to have the patient review the taped episodes as well.

The clinician will review all recorded clinical events, provide a descriptive report of the episodes, and categorize them as to seizure type or other paroxysmal event. Particular attention is directed toward motor activity,⁴ muscle tone, changes in consciousness, report of aura,⁵ and postictal behavior. Comparison of various episodes for an individual permits judgment as to stereotypy of events, versus random occurrence which varies from episode to episode. Random occurrence of motor events supports non-epileptic attacks, whereas stereotyped motor activity is more in keeping with epileptic seizures.⁶ Clinical events must be correlated with EEG activity and neuroendocrine data when final conclusions are derived.

If the patient is maintained on AED's and no clinical events or diagnostic EEG changes have occurred after the initial period of monitoring, further reduction of AED dosage may be in order. In some instances, attempts to induce seizures may be productive, particularly when non-epileptic attacks are a consideration. Induction of non-epileptic attacks has been accomplished by using intravenous injections of saline and through other means which suggest to the patient that a significant clinical event appears imminent. This



Figure 2. The monitor demonstrates a split screen display of simultaneously recorded EEG and video data.

approach may be quite helpful in reaching the appropriate diagnostic conclusion, but ethical considerations demand that the patient not be deliberately misled and that there is appropriate sensitivity toward the patient and his concerns. Unlikely as it may seem, the sudden revelation that a patient who has been labelled epileptic does not in fact have epilepsy can be very disruptive to his self-concept and to interpersonal dynamics, particularly within his family.

The establishment of the correct diagnosis of epilepsy will often lead to a reassessment of AED treatment. In addition, the ascertainment of a particular type of seizure may lead to a more specific neurological diagnosis and may carry implications as to more precise prognosis in terms of seizure control and underlying brain pathology.

ANALYSIS OF EEG DATA

Continuous EEG recording over a period of several days creates an enormous volume of data, so that efforts toward data reduction for storage become mandatory. Use of continuous paper recording is impractical for these reasons. Means by which data reduction has been achieved include the use of split screen recordings of EEG and clinical events side by side. This approach is also useful to more easily correlate EEG and clinical events. An alternative approach is to review taped EEG

recordings with a monitor, recording selected portions on paper for further review and correlation with clinical episodes.

Whatever review and storage method is used, the importance of correlating EEG and clinical events cannot be overemphasized. In many cases, the interictal EEG reveals discrete electrical events which may be misinterpreted in isolation as representing a clinical epileptic seizure.⁷ By the same token, many individuals display stereotyped behavioral phenomena which may be misconstrued as an epileptic event unless there is corroboration from simultaneous EEG or neuroendocrine data.

APPLICATION OF NEUROENDOCRINE DATA

Ohman and his coworkers first recognized transient hyperprolactinemia following electroconvulsive therapy.⁸ Trimble applied the use of serum prolactin to the diagnosis of epilepsy, noting an increased prolactin following generalized convulsive seizures.⁹ Since Trimble's contribution, serum levels of prolactin and other pituitary hormones have been used as an indicator of epileptic seizures.

There is relatively little variation in waking, interictal serum prolactin levels, except for transient elevation after sleep, including daytime naps. There is at least a two-fold rise in serum prolactin levels following a small percentage of simple partial seizures, the majority of complex partial seizures,¹⁰ and virtually all generalized tonic-clonic seizures. Peak postictal serum levels occur within fifteen to twenty minutes, declining toward baseline levels over a period of approximately one hour. There is no appreciable change in serum prolactin after absence or myoclonic seizures, nor do non-epileptic seizures produce changes in serum prolactin.¹¹

The use of neuroendocrine data may seem superfluous when behavioral events and EEG have been meticulously recorded, but the ambiguity of some electroclinical events and the inevitable possibility of equipment failure

render neuroendocrine data valuable supporting information in the interpretation of some episodes. Figure 3 demonstrates such a case. For two years, a 16-year-old young woman had experienced recurrent episodes of gagging, increased salivation, and paresthesias of the left side of her face, often occurring premenstrually. The possibility of epilepsy had been discarded by her physician after normal CT brain scan and EEG, including ictal EEG recording. When the attacks continued, she was admitted to the Roper Epilepsy Center for intensive neurodiagnostic monitoring. Just prior to attachment of the EEG electrodes, there was tonic version of her head to the left, followed by loss of consciousness and a generalized tonic-clonic seizure. During several days of monitoring, no attacks were recorded by video or EEG, but serum prolactin levels rose after the unmonitored seizure from an interictal value of 15.2 ng./ml. to greater than 100 ng./ml. 20 minutes postictally and 54.8 ng./ml. 95 minutes postictally (Figure 3). A magnetic resonance brain scan was performed, demonstrating a lesion in the right frontal operculum. At craniotomy an oligodendroglioma was resected successfully, and she has remained free of seizures and recurrence of the neoplasm.

SERUM ANTIEPILEPTIC DRUG LEVELS

Serum AED levels should be obtained as baseline information when the monitoring session begins and at appropriate intervals thereafter. The time spent in monitoring may also be used profitably to assess problems in compliance with the AED regimen and to consider potential problems with drug interactions, including AED's and medications prescribed for other purposes.

SUMMARY

Intensive neurodiagnostic monitoring is useful in the diagnosis and classification of epileptic seizures and other paroxysmal disorders. The correlation of clinical/behavioral data, EEG events, and serum prolactin levels

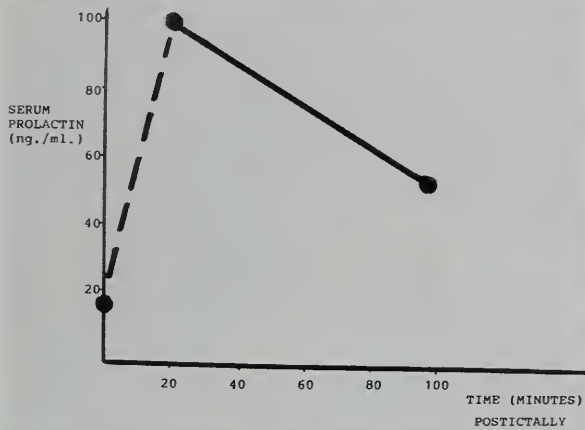


Figure 3. Twenty minutes after a generalized seizure with focal onset, there is a marked rise in serum prolactin, declining towards baseline interictal levels 95 minutes after the seizure.

may clarify the type(s) of epileptic seizures and may distinguish epileptic seizures from non-epileptic events. Serial determinations of AED's may assist in the detection of problems with AED compliance and with drug interactions which complicate the patient's management. □

REFERENCES

1. Thorpy MJ: Classification of sleep disorders. *J. Clin. Neurophysiol.* 7:67-81, 1990.
2. Delgado-Escueta AV, Enrile-Bascal, FE: Juvenile myoclonic epilepsy of Janz. *Neurology* 34:285-294, 1984.
3. Penry JK, Porter RJ, Dreifuss FE: Simultaneous recording of absence seizures with videotape and electroencephalography. A study of 374 seizures in 48 patients. *Brain* 98:427-440, 1975.
4. Kellaway P, Hrachovy RA, Frost JD, et al.: Precise characterization and quantification of infantile spasms. *Ann. Neurol.* 6:214-218, 1979.
5. Cascino GD and Karnes WE: Gustatory and second sensory seizures associated with lesions of the insular cortex seen with magnetic resonance imaging. *J. Epilepsy* 3:185-187, 1990.
6. Wilkus RJ, Thompson PM, and Vossler DG: Bizarre ictal automatisms: frontal lobe epileptic or psychogenic seizures? *J. Epilepsy* 3:207-213, 1990.
7. Shewmon DA: What is a neonatal seizure? Problems in definition and quantification for investigative and clinical purposes. *J. Clin. Neurophysiol.* 7:315-368, 1990.
8. Ohman R, Walinder J, Balldin J, and Wallin L: Prolactin response to electroconvulsive therapy. *Lancet* 2:936-937, 1976.
9. Trimble M: Serum prolactin in epilepsy and hysteria. *Br. Med. J.* 2:1682, 1978.
10. Sperling MR, Pritchard PB, Engel J, Daniel C, Sagel J: Prolactin in partial epilepsy: an indicator of limbic seizures. *Ann. Neurol.* 20:716-722, 1986.
11. Pritchard PB, Wannamaker BB, Sagel J, Nair R, deVillier C: Endocrine function following complex partial seizures. *Ann. Neurol.* 14:27-32, 1983.



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SCMA NEWSLETTER

A PUBLICATION OF THE SOUTH CAROLINA MEDICAL ASSOCIATION

Joy Drennen, Editor

798-6207, in Columbia

Contributions welcomed

1-800-327-1021, outside Columbia

May 1992

ANNUAL MEETING HIGHLIGHTS

Elections: Officers and trustees elected or reelected by the House of Delegates are as follows: President-Elect, Edward W. Catalano, MD; Secretary, Stephen A. Imbeau, MD; Treasurer, Benjamin E. Nicholson, MD; District 2 Trustees, Bryan L. Walker, MD, and S. Nelson Weston, MD; District 4 Trustee, Jerry R. Powell, MD; District 5 Trustee, R. Duren Johnson, Jr., MD; District 6 Trustees James M. Lindsey, Jr., MD, and Sompong Kraikit, MD; and District 8 Trustee Dallas W. Lovelace, III, MD; AMA Delegates Randolph D. Smoak, Jr., MD, Walter J. Roberts, Jr., MD, and Daniel W. Brake, MD, and Alternate Delegates Charles R. Duncan, Jr., MD, Stephen A. Imbeau, MD, and Roger A. Gaddy, MD.

At the reorganizational meeting of the Board of Trustees, S. Nelson Weston, MD, was elected Chairman of the Board and Jerry R. Powell, MD, was elected Vice Chairman of the Board. Serving as Clerk will be James M. Lindsey, Jr., MD, and Richard E. Ulmer, MD, will serve as Executive Committee Member at Large.

Bartolo M. Barone, MD, was installed as the 1992-93 SCMA president, and Mrs. J. Michael Grayson (Hope) was installed as the SCMA Auxiliary president.

Resolutions: The House adopted a resolution to reduce the length of the annual meeting for a three-year trial period beginning in 1993. A resolution to rescind support of HR.4244 (Health Services Cost Review Commission) was adopted, after it was amended to add that the SCMA endorse the concept of progressive healthcare reforms that embrace improved universal access and equitable cost control for all patients.

The House adopted a resolution to work with state and federal lawmakers to ban television beer advertising. A resolution calling for mandatory HIV testing for all hospital admissions and marriage license applicants was amended to state that the SCMA encourages knowledge of the HIV status of sexual partners and the SCMA supports patient testing where deemed appropriate by the attending physicians for medical treatment or following an exposure incident. The House went on record as supporting "abstinence, fidelity and other sound methods" to

prevent the spread of AIDS and sexually transmitted diseases. The House also adopted a resolution that the SCMA take steps to restore to the physician in the hospital setting the ability to use preprinted orders including controlled substances, excluding the dosage, thus restoring to the physician the ability to efficiently, consistently and accurately dispense good quality care to his patients. A resolution opposing the elimination of the requirement for physician referral to physical therapy was adopted and a resolution urging third party payers to increase reimbursement for cardiac rehabilitation services was referred to the Board of Trustees. The House adopted a resolution that local county medical societies should sponsor the use of standardized pre-season high school sports evaluation forms and injury report forms, as well as encourage broad-based physician participation in providing these services to their community.

Bylaws Changes: A bylaws change to limit the terms of the AMA delegates and alternate delegates was adopted. Also adopted was a stipulation that a member of the House of Delegates may not represent more than one entity in the House and may cast only one vote on questions before the House. The bylaws were changed to provide students from both medical schools representation in the House, and the name of the Committee on Perinatal and Maternal Health was officially changed to the Maternal, Infant, and Child Health Committee. A proposed revision to the bylaws to eliminate the requirement for component local medical society membership as a prerequisite for SCMA membership was not adopted.

Awards: Harrison L. Peebles, MD, a Scotia Family Practitioner and SCMA Past President, received the prestigious President's Award, presented by J. Chris Hawk, III, MD, Immediate Past President. Sheila Carnett of the *Greenville News* received the Journalism Award in the print category; Audrey Fannin of WLTR-FM in Columbia was the recipient in the radio category; and Sonya DiCarlo, formerly of WCSC in Charleston, was the recipient in the television category. The SCMA received an award from AMPAC for having the highest percentage of sustaining members. □

MEDICARE UPDATE

HCFA 1500 Form: At the time this newsletter goes to press, the AMA has informed us that HCFA has extended the grace period for use of the new 1500 form until July 1, 1992; the Medicare carrier in SC (BC/BS of SC) was unable to confirm this. If you have encountered trouble in converting your electronic billing system, you are encouraged to call the Medicare Service Center to obtain information on whether an extension is permitted or whether you will need to submit hard copy claims on the new form. By now you should have attended the Medicare workshop on how to complete the new forms. If you were not able to attend any of the workshops, you should contact Medicare for the most recent instructions for completing the HCFA-1500 forms. Medicare has asked that you follow the guidelines listed below as they will have scanners sometime in the future. **Medicare continues to accept handwritten claim forms; providers will be notified prior to changing to the scanner.**

- The form is designed for typewritten characters 10 pitch (pica).

- Use standard dot matrix fonts.
- Character fonts may not be mixed on the same form.
- Italics and script font styles may not be used.
- Old or worn print bands or ribbons should be avoided.

- Use upper case (CAPITALS) letters for all alpha characters.

- Do not use the dollar signs or decimals in money fields.

- Enter all information on the same horizontal plane.
- Enter all information within the designated field.
- Extraneous data may not be printed, handwritten, or stamped on the form.
- Corrections may be made with correction tape only.
- Corrections may not be handwritten on any data field.
- Pin-feed edges are to be removed evenly at side perforations.

Following are some things to remember when completing HCFA 1500 forms:

1. If the referring physician is out of state, you still need

his UPIN number (Name in 17, UPIN in 17A).

2. When billing for an ER physician, it is not necessary to have a referring physician UPIN **unless** the ER physician reads X-rays. If the ER physician reads X-rays, then his own UPIN goes in as referring physician.

3. Anesthesia claims do not require a referring physician UPIN.

4. If you know something is not covered you are not required to file these charges with Medicare.

5. If there is an attachment to a claim with medical documentation, it is recommended that you indicate this in block 21.

6. Medicare will accept up to two modifiers per procedure code, and up to four diagnosis codes.

7. You should complete blocks 4, 7 and 11 A-C **only** if the patient has other insurance which is primary to Medicare. Block 11D must be checked either yes or no. If not checked, the claim will be returned.

Fee Schedule and Limiting Charges: HCFA has required the carriers to recalculate the fee schedule (and limiting charges) for approximately 150 codes. Please review your May 1992 Medicare Advisory SB-04-0592 from BC/BS in order to obtain these new amounts. Previously submitted 1992 claims can be resubmitted if you wish to obtain the new rate.

Place of Service Codes: The new two-digit Place of Service (POS) codes were published in the December 1991 Medicare Advisory. At that time, it was reported that you could begin using the new codes. Some providers experienced difficulty submitting the new codes and BC/BS has since requested that you use the one-digit POS codes you were previously using until notified of the new effective date. **Effective May 1, you must begin using the new two digit codes.** See February's Physician Payment Reform Update, which examines the new HCFA-1500 claim form, for additional information on the new POS codes.

For additional information, contact Cindy Osborn at the SCMA. ☐

MEDICAID UPDATE

Acne Diagnosis Code: The ICD-9 diagnosis code for acne (706.1) will not be covered under the SC Medicaid Program effective with dates of service beginning May 1, 1992. A psychological referral will not be required for dates of service from October 1, 1991 through April 30, 1992. Please return any error correction forms (ECF) with error codes 758 or 759 (diagnosis code requires support documentation) to your program manager or you may submit a new claim.

Keloid Scar Diagnosis Code: The ICD-9 diagnosis code for keloid scar (701.4) will no longer require support documentation. The support documentation requirement has been removed for dates of service from October 1, 1991 through April 30, 1992. If you have received an ECF with error codes 758 or 759 for keloid scar diagnosis code, you may return it to your program manager or submit a new claim. Only severe cases with at least one of the following condition(s) will be covered and the condition(s) must be

documented in the patient's chart: (1) pain; (2) intractable itching; (3) interference with range of movement.

New Medicaid Refund Forms: The Medicaid Check Refund Form (HHSFC Form 205) has been revised and replaces the 1985 edition of the same form. A bulletin with a copy of the new form is being forwarded to all Medicaid providers. You are encouraged to contact your program manager when the need for a refund is identified. A debit to your Medicaid account will be made on a future remittance. Should you prefer to refund the Medicaid program instead, please attach the 205 form to your

refund check. *The 3/92 version of the Medicaid Check Refund Form may be ordered from: State Health and Human Services Finance Commission Supply, PO Box 8206, Columbia, SC 29202-8206.*

Payment for Physician Services to Pregnant Women and Children: You should have received a Medicaid Bulletin dated April 10, 1992 regarding payment for physician services provided to pregnant women and children under 21. SHHFC requested in that bulletin that physicians sign an addendum which was included and return it no later than May 1, 1992. ***This date is incorrect and should read June 1, 1992.*** ☐

CLIA-88 REGULATIONS

This month physician office labs should receive an application and a bill for an initial certificate for the type of testing performed. If you do not hear from HCFA, call HCFA's regional office at (404) 331-0083 and ask for the HSQB representative.

With the release of final rules to implement CLIA-88, physician office labs are reminded that the Commission on Office Laboratory Accreditation, or COLA, is seeking authorization to certify physician laboratories. The commission is currently handling between 40 and 50 applications a day. It expects to double its capacity within the next several years as the need for services grows.

COLA was founded in 1988 by the AMA, the American Academy of Family Physicians, the American Society of Internal Medicine and the College of American Pathologists. It has accredited more than 1,200 office laboratories.

For more information, contact COLA, 8701 Georgia Ave., #610, Silver Spring, MD 20910. (301) 588-5882.

The SCMA will continue to keep you apprised of CLIA regulations. *Call Barbara Whittaker at the SCMA if you have questions.* ☐

NEW CHAMPUS PRO

The Medical Society of Virginia Review Organization (MSVRO) is the new PRO for CHAMPUS. Preadmission and retrospective review began May 1.

Contact MSVRO at 1606 Santa Rosa Road, Suite 235, PO Box K70, Richmond, Virginia 23288 (804) 289-5320. ☐

NOTIFICATION OF FILING CLAIMS

You are reminded that H.3040 enacted by the General Assembly requires all licensed healthcare providers to post notice of their policies and procedures regarding filing claims. **Also, debtors must be notified by mail 20 days before submitting a debt to a credit bureau or credit reporting agency.** ☐

HIGHLIGHTS OF APRIL 29 BOARD OF TRUSTEES MEETING

The Board of Trustees received updates on proposed legislative and regulatory changes regarding nurse practitioners, physicians' assistants, chiropractors and physical therapists.

The board reviewed a draft contract which will be mailed to all SC physicians later this year by the state employees' insurance plan. The board will provide comments

and concerns to the plan. When a final version is available, the SCMA will provide members with an analysis of the proposed contract in order to assist in their review and decision whether to sign.

The board elected William H. Hester, MD, to the SCIMER Board of Directors. ☐

DHEC PLANS ROUTINE HEPATITIS B IMMUNIZATIONS

On June 1, DHEC plans to begin providing routine hepatitis B immunizations to infants born on or after January 1, 1992 who are being served by the health departments. Hepatitis B vaccines will also be made available to private physicians who are using DHEC vaccines for EPSDT and indigent patients.

DHEC will be meeting with hospitals and physician groups and organizations to work towards having the first hepatitis B shot given while the newborn is still in the hospital.

Contact your local health department or district health director for more information. ☐

AOA MOBILE MEDICAL VANS

In 1992, the osteopathic medical profession celebrates its centennial -- "Osteopathic Medicine: A Century of Making a Difference." The American Osteopathic Association (AOA) is giving a gift of service to the nation in celebration. The AOA is dispatching mobile medical vans, dubbed Care-A-Vans, to provide basic healthcare screening in areas of the country desperately in need of medical attention. These vans are staffed by volunteer osteopathic physicians and students and will travel throughout the 48 contiguous states. In South Carolina, the van has travelled to Inner Faith Crisis Center, Charleston; Marlboro Park Hospital in Bennettsville; Pineland Mill Shopping Center in Hilton Head; Chesterfield General Hospital in Cheraw, and Edisto Food Market in Edisto Island.

AMERICANS WITH DISABILITIES ACT

The November, 1991 SCMA Newsletter contained a detailed article regarding how the Americans with Disabilities Act (ADA), which became effective January 26, 1992, affects your practice.

For more specific information about ADA requirements affecting public accommodations, contact the *Department of Justice, Office on the ADA, Civil Rights Division, PO Box 66118, Washington, DC 20035-6118 (202) 514-0301.*

For more specific information about ADA requirements affecting employment, contact the *Equal Employment Opportunity Commission, 1801 L Street, NW, Washington, DC 20507 (202) 663-4900.*

It might be helpful to you to request *The Americans with Disabilities Act, Your Responsibilities as an Employer* booklet when you call. ☐

VIDEOTAPE AVAILABLE

The SCMA has available on loan a videotape on "HIV Issues in the Health Care Setting" which presents information on the perceived and actual risk of HIV transmission in the hospital and health facility, including transmission from patient to physician and physician to patient.

To obtain a copy on loan, contact Cathy Boland at SCMA Headquarters. ☐

SCIMER UPDATE

The SCIMER board voted to provide \$5,000 to the SC Health Policy Council, a statewide, non-governmental organization on which the SCMA has a representative. This council will review and develop healthcare policies for our state.

In addition, the SCIMER board awarded 17 scholarships to medical students.

SURGICAL MANAGEMENT OF EPILEPSY: INVASIVE MONITORING AND TEMPORAL LOBECTOMY*

CURTIS WORTHINGTON, M. D.**

INTRODUCTION

Of the focal epilepsies, partial complex seizures of temporal lobe origin constitute the most common disorder, and the one most amenable to surgical treatment. Evaluation of patients with such a disorder is aimed at determining, as precisely as possible, the focus within the temporal lobe responsible for the onset of the seizures. This evaluation may include anatomic imaging (skull x-rays, computed tomography, cerebral angiography, and magnetic resonance imaging), functional imaging (positron emission tomography, single photon emission computed tomography), neuropsychological testing, and most especially electroencephalographic recording, usually with continuous prolonged recording and video monitoring. In spite of lengthy electrographic recording, at times it may still be difficult to localize the seizure focus sufficiently to recommend surgical resection. Especially in the case of temporal lobe epilepsy, this may be due in part to the relative distance from the surface electrode to the cortical focus, especially to the medial aspects of the temporal lobe most usually implicated. It may also be due, in part, to the interposition of scalp, skull, and temporalis muscle (offset somewhat by sphenoidal placement of electrodes) between the recording electrode and the focus.

INDICATIONS FOR INVASIVE MONITORING

When clinical evidence tends to indicate an epileptogenic focus, but prolonged surface

recordings fail to clearly resolve the focus sufficiently to recommend surgery, then invasive monitoring techniques may be considered. The principle indication for invasive monitoring is ambiguity of lateralization, that is, temporal lobe discharges that appear to be coming from both temporal lobes without clear-cut predominance of one or the other. This may take the form of interictal spiking seen chiefly in one, but actual seizures appearing to arise from the other; or interictal activity and/or actual seizures in about equal predominance from both temporal lobes.

Other indications for invasive monitoring include an unclear focus within one hemisphere, that is, seizures all appearing to arise from the same side, but in different lobar distributions (e.g. frontal versus temporal). Another indication is rapid propagation, that is, secondary generalized or multifocal abnormalities in a clinical situation in which a single primary site is suspected. Predominant discharges distant from a structural lesion constitutes another relative indication. Finally, epileptogenic foci associated with eloquent areas of the brain may also be an indication for invasive monitoring. (Table I).

TECHNIQUES IN INVASIVE MONITORING

The most common types of invasive monitoring electrodes are epidural electrodes, subdural grids and strips, trans-foramen ovale electrodes, and depth electrodes. Different combinations of these monitoring devices are used at various centers.^{1, 7, 12, 14, 15}

The technique employed in Charleston uses a combination of subdural strip electrodes and depth electrodes. The subdural strip electrodes have four to six contact points, and the depth electrodes have six contact points.

* From the Roper Hospital Epilepsy Unit and the Department of Neurosurgery, Medical University of South Carolina, Charleston; Charleston Epilepsy Program.

**Address correspondence to Dr. Worthington at 125 Doughty Street, Suite 400, Charleston, SC 29403.

TABLE I. INDICATIONS FOR INVASIVE MONITORING

- * Ambiguity of lateralization; seizures or interictal activity from both sides
- * Unclear focus within one hemisphere
- * Focal abnormality with rapid generalized propagation
- * Predominant discharges remote from structural lesion
- * Foci associated with important functional cortex

Using computerized stereotactic technique (Leksell stereotactic frame; Elekta Instruments, Tucker, Georgia), depth electrodes can be placed with great precision and accuracy in any desired location within the frontal or temporal lobe. Subdural strip electrodes are placed via small burr holes over the cortical surface in question.

In temporal lobe epilepsy, it is desirable to be able to record from the lateral cortical surface (temporal neocortex) as well as the medial temporal structures (amygdala and hippocampus) which are implicated in the majority of temporal lobe problems. Placement of a subdural strip from anterior to posterior along the temporal lobe, and a depth electrode placed occipitally with deepest contact points in the amygdala, allows for anterior-posterior or medial-lateral referential recording. (Figure 1) An alternative technique is orthogonal (lateral) placement of multiple depth electrodes along the temporal lobe with the deepest contacts in the medial structures (amygdala and hippocampus) and the most superficial along the cortical surface.⁷

Once these invasive electrodes are placed, EEG recording can be carried out directly from structures in the brain implicated in epileptogenesis. Patients are again monitored closely in an epilepsy unit with video correlation. Electrodes may be left in place up to three weeks. At least three typical seizures

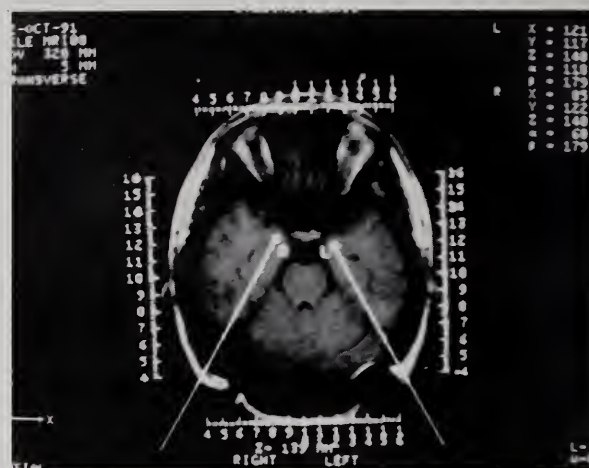


Figure 1. Magnetic resonance imaging (MRI) with superimposed stereotactic coordinate grid. Planned pathways of two medial temporal depth electrodes are shown. The target coordinates of the tips of the depth electrodes are shown at right of image.

should be captured before a final surgical decision is made. Ten patients have been studied to date in the Epilepsy Unit at Roper Hospital, using a combination of frontal and temporal depth electrodes and subdural strip electrodes.

TEMPORAL LOBECTOMY

Consideration of all the data accrued in each case may lead to good localization of an epileptogenic focus which may be amenable to surgical removal. All data must be considered, including the radiologic (skull x-ray, CT, MRI, SPECT, PET), neuropsychologic, and especially electrographic. Ideally, there should be concurrence between these tests. Extreme caution should be employed if there is disagreement between any of these modalities. When these tests agree, and the patient has been proven to be intractable to extensive medical therapy, and when the seizure disorder is clearly disabling to a reasonably normal life for the individual, then there is a clear indication for surgery.^{2, 5, 6, 8, 9, 10}

Approximately 80 percent of patients with focal epilepsy have a focus within one or the other temporal lobe. Some form of temporal lobectomy is, therefore, the most common surgical procedure done for epilepsy. From the earliest series of Penfield in Montreal in the 1930s, over 50 centers worldwide, includ-

ing the epilepsy program in Charleston, South Carolina, now perform this procedure.

Depending on the hemispheric dominance of the patient, temporal lobectomy is generally preceded by so-called speech amygdal testing. This test is designed to determine the location (right, left or mixed) of the patient's principle speech and memory function. It is accomplished by injecting amybarbital, a short-acting barbiturate, into a selected carotid artery, essentially putting half the brain to sleep. If speech and memory function are located in the temporal lobe containing the epileptogenic focus, then the surgeon is limited in the extent of cortical resection that is possible.^{3,13}

Various surgical techniques are used at different centers for performing temporal lobectomy.^{4, 6, 8, 11} In Charleston, a modification of the technique developed in Montreal is employed. Many cases are carried out under local anesthesia. This allows the surgeon to "map" the motor and sensory cortices, as well as test for speech location intraoperatively. It also allows the surgeon to perform a very clear electrocorticogram or EEG recording directly from the surface of the brain for final determination of the location of the main epileptic discharges (Figure 2). General anesthesia is used if the temporal lobe in question is a nondominant one (that is, not containing speech and memory) and the focus has been well defined preoperatively; or if the patient is of an age or mental status that preclude cooperation under local anesthesia.

Once cortical mapping is carried out using low voltage electrical stimuli, and after the electrocorticogram, the temporal resection is carried out using bipolar coagulation and subpial resection. In general, lateral cortical or neocortical removal is carried out 4.5 cm along the Sylvian fissure and 5.0 cm along the floor of the middle fossa in a dominant temporal lobe; and 5.0 cm along the Sylvian fissure and 5.5 cm along the floor of the middle fossa in a nondominant temporal lobe. Once the lateral cortex is removed, a radical removal of the amygdala and anterior 1.0-2.0

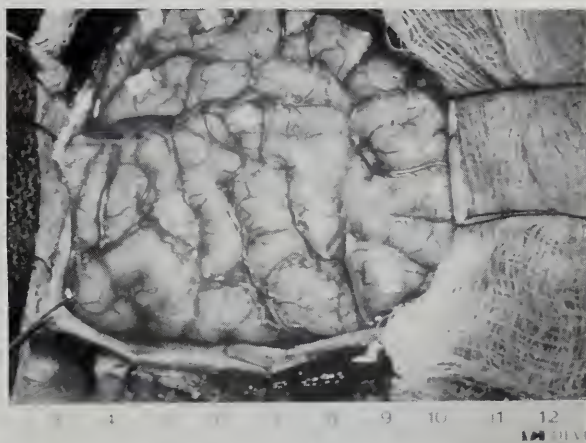


Figure 2. Exposed surface of frontal and temporal lobes of the brain at epilepsy surgery. Numbers 1-3 show areas of sensory response to stimulation, while number 4 shows an area of motor response. Letters are placed at points of maximal epileptic discharge on EEG.

cm of the hippocampus is carried out. These medially placed neuroanatomic structures are implicated in about 70 percent of temporal lobe epilepsy cases (Figure 3).

RESULTS

Between July, 1987 and November, 1990, 15 temporal lobectomies for epilepsy were carried out in the Charleston Epilepsy Program using resources of Roper Hospital and the Medical University of South Carolina. Of these 15 patients, nine patients remained seizure-free after at least one year of follow-

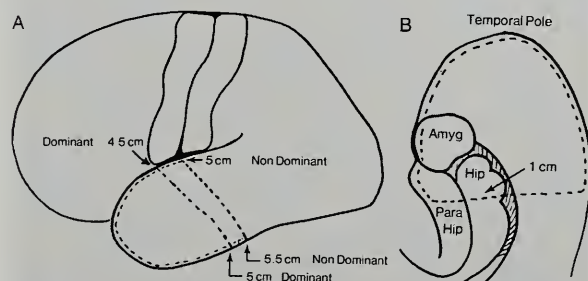


Figure 3. (A) Lateral view showing extent of temporal lobe removal at seizure surgery in dominant and non-dominant hemispheres. (B) Horizontal view of temporal lobe showing extent of removal of lateral and medial temporal structures. (From Olivier, A.⁸)

up, five patients showed substantial improvement with a definite positive measurable effect on the quality of life, and one patient did not improve. These results compare very favorably with the results of most major centers performing temporal lobectomy, including the Montreal Neurological Institute, which report approximately 50 to 60 percent of patients seizure-free, and approximately 30 percent more with substantial improvement in seizure frequency with a reduction of at least 50 percent in the seizures. Thus, success rate in the range of 80 to 90 percent is generally reported.^{2, 5, 6, 8, 9, 10}

The complication most frequently seen after temporal lobectomy is a contralateral superior quadrantanopsia, or visual field defect. This is due to the fact that the so-called Meyers loop of the optic radiations pass through the temporal lobe and are disrupted with temporal lobectomy. This visual field defect is minor and usually unnoticed by the patient. Serious neurologic sequelae such as aphasia or hemiplegia are rare: reported at less than three percent. Memory deficits can be avoided with careful neuropsychologic testing preoperatively. In our series of 15 patients here reported, no serious complications have occurred.

CONCLUSION

Of all patients with epilepsy, approximately one-third have focal epilepsy. A significant number of these (perhaps as many at 50 percent) have an electrographically definable focus which may be amenable to surgical removal. In particular, patients with temporal lobe epilepsy are likely candidates for surgery. Careful selection of the patient population, and the use of sophisticated new monitoring techniques, including invasive monitoring as here reported, can result in very good seizure control in patients in whom other therapies have failed. Success in epilepsy surgery, however, cannot be carried out without a significant team effort which involves neurologists, neurosurgeons, neuro-radiologists, neuropsychologists, and other

important support staff. □

REFERENCES

1. Goldring S and Gregorie M: Surgical management of epilepsy using epidural recording to localize the seizure focus. *J Neurosurg* 60:457-466, 1984.
2. Green JR: Temporal lobectomy with special reference to selection of epileptic patients. *J Neurosurg* 26:584-593, 1967.
3. Milner B: Psychological aspects of focal epilepsy and its surgical management. In Purpura DP, Penry JK, Walter RD (eds): *Advances in Neurology*, Vol 8. New York: Raven Press, pp 299-321, 1975.
4. Niemeyer P: The transventricular amygdalo-hippocampectomy in temporal lobe epilepsy. In: *Temporal Lobe Epilepsy*, edited by M. Baldwin and P. Bailey, pp. 461-482. CC Thomas, Springfield, Illinois, 1958.
5. Ojemann GA. Surgical therapy for medically intractable epilepsy. *J Neurosurg* 66:489-499, 1987.
6. Olivier A: Surgical management of complex partial seizures. In: *Epilepsy: An Update on Research and Therapy*. Alan R. Liss, Inc., New York, NY. pp 309-324, 1983.
7. Olivier A, Gloor P, Andermann F, et al: The place of stereotactic depth electrode recording in epilepsy. *Appl Neurophysiol* 48:395-400, 1985.
8. Olivier A: Commentary: Cortical Resections. In: *Surgical Treatment of the Epilepsies*, edited by J. Engel, Jr.: Raven Press, New York, NY, 1986.
9. Penfield W, Flanigin H: Surgical therapy of temporal lobe seizures. *Arch Neurol Psychiatr* 64:491-500, 1950.
10. Rasmussen T: Surgical treatment of patients with complex partial seizures. In Penry JK, Daly DD (eds): *Advances in Neurology*, Vol 11, New York: Raven Press, pp 415-449, 1975.
11. Spencer D, Spencer S, Mattson RH, Williamson P, and Novelly R: Access to the posterior medial structures in the surgical treatment of temporal lobe epilepsy. *Neurosurgery* 15:667-671, 1984.
12. Spencer D: Depth electrode implantation at Yale University; in Engel J Jr (ed): *Surgical Treatment of the Epilepsies*. New York, Raven Press, pp 603-608, 1987.
13. Wada J and Rasmussen T: Intracarotid injection of sodium Amytal for the lateralization of cerebral speech dominance: Experimental and clinical observations. *J Neurosurg* 17:266-282, 1960.
14. Worthington C and Eastman W: Depth electrode implantation device for use with the Leksell stereotactic frame. *Stereotact Funct Neurosurg* 56:129-134, 1991.
15. Wyler AR, Ojemann GA, Lettich E, Ward AA: Subdural strip electrodes for localizing epileptogenic foci. *J Neurosurg* 60:1195-1200, 1984.

HEMISPHERECTOMY, CALLOSTOMY, AND FRONTAL LOBECTOMY FOR SEIZURES

CRISTIAN L. VERA, M. D.*

HEMISPHERECTOMY

Damage of varied etiologies (traumatic, vascular, encephalitic, tumoral) to an extensive territory of one cerebral hemisphere can produce large areas of epileptogenic cortex. When such a lesion causes a hemiplegia early in life and when the accompanying seizures are severe or unacceptably frequent as well as inadequately controllable by medication, the conditions to consider a hemispherectomy are met. This formidable operation was first described simultaneously in France and in the United States by Lehermitte and Dandy in 1928.^{2,4} They proposed it (with notorious lack of success) for the treatment of malignant brain tumors of the nondominant hemisphere. The first series of patients operated on with a hemispherectomy for infantile hemiplegia and seizures was reported in 1950 by Krynauw³ although McKenzie⁶ had already performed this operation in 1938 for the treatment of seizures in a patient with infantile hemiplegia.

The procedure consists of ablation of the contents of the supratentorial compartment of one side of the head sparing the basal ganglia to a variable extent (Figures 1, 2). The anterior, middle and posterior cerebral arteries are clipped distal to the emergence of the all important perforating components. The corpus callosum is divided from front to back, and the white matter of the centrum semiovale is divided just lateral to the basal ganglia.

The results of this operation are excellent in terms of seizure control when the epileptogenesis has been demonstrated preoperatively to

originate in the hemisphere to be removed. All of our six hemispherectomy cases have been followed for five to twelve years post-operatively, and the four cases where no abnormal EEG activity was demonstrated to

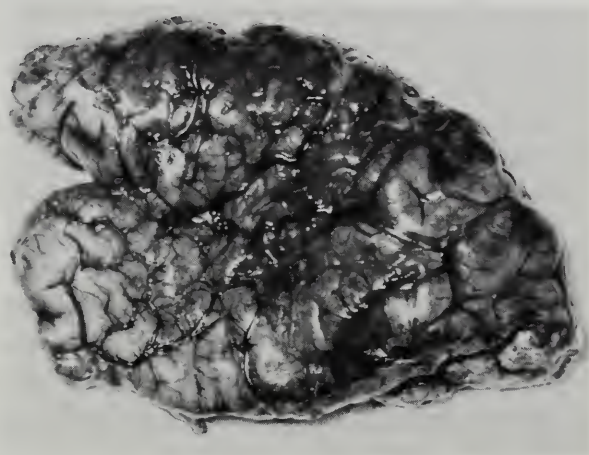


Figure 1. Surgical specimen of left hemispherectomy done eight years ago at age two for intractable seizures (up to 100 episodes daily). Patient now talks, reads and writes. On no medications.

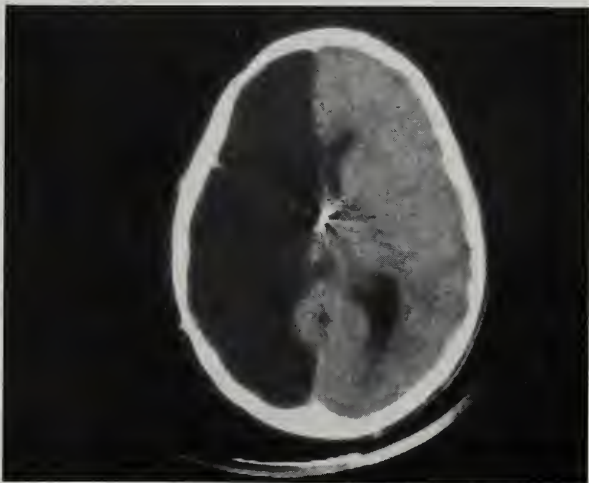


Figure 2. Head CT one year after right hemispherectomy done 12 and one-half years ago for intractable seizures (up to 10 episodes daily) and behavior disorder. Today high school graduate at age 19. On no medications.

*Department of Neurosurgery, Medical University of South Carolina, 171 Ashley Avenue, Charleston, SC 29425; Charleston Epilepsy Program.

come from the spared hemisphere are completely free of seizures, going to school (one in college, one just graduated from high school, one in high school and one in first grade) and not taking medications at all. In two of our cases the pathological process was known to have involved both hemispheres. In these two patients then the operation was performed for palliative purposes only. In one case the disease was a degenerative progressive condition, and the patient went from having seizures every five to 10 minutes to having two or three seizures a day after the operation but died a year after surgery. The other case was being treated with maximum doses of anticonvulsants (to the point that these substances were crystallizing in his urine). After surgery he still has seizures but in less than half the number he had them preoperatively, and he has continued developing at a slow pace.

If these patients do not have an hemianopia before surgery, they get one with the operation. Their hemiplegia does not improve in terms of finger movement but two of our cases can move their "paralyzed arm" above their head, and the four of them who had a complete indication for the surgery with an infantile hemiplegia can walk. Our only patient with the left hemispherectomy can talk, and all of them can feel pain on the paralyzed side of the body. In two of our patients (followup over 10 years) their IQ rose 10 points after surgery. This is considered to be in part at least due to the freedom from anticonvulsant medication and in part to the absence of abnormally timed epileptic activity coming into the normal hemisphere from the abnormal one via commissures and "jamming the circuits" of normal function.

The immediate postoperative complications of this operation (hemorrhages, infections, fatal displacements of the remaining hemisphere under the falx with consequent brainstem distortion and hydrocephalus due to inadequate CSF reabsorption)¹¹ have not occurred in our cases. In one of them hydrocephalus of the normal hemisphere did devel-

op but over five years after surgery and was effectively treated by shunting. The most important complication demonstrated in the very late followup of these cases, however, seems to be a variably delayed four and one-half to 31 years postoperatively.¹¹ This is a pathological condition¹¹ consisting of a syndrome of progressive physical and mental deterioration accompanied at time with some of the so-called "increased intracranial pressure symptoms attributed to the deposition of iron compounds under the arachnoid of the remaining hemisphere and in the cavity left by the hemispherectomy which communicates with the remaining ventricles through the foramen of Monro and where a membrane like the one of chronic subdural fluid collections is found. This picture was first described as a consequence of repeated bleeding by Noetzel,⁷ and it was found in 33 percent of the total hemispherectomy cases between four and one-half and 31 years postop.¹¹ This percentage of late complications is considered unacceptable today. The cause of this is suspected to be the repeated passage of red blood cells to the CSF by constant episodes of jolting of the defectively tucked single hemisphere or by the physiologically induced rise in pressure when coughing, sneezing or straining. To avoid it two techniques have been proposed. One is what has been called the Functional Hemispherectomy and which consists essentially of removing three-fourths or two-thirds of the epileptogenic hemisphere including the anatomically gross lesion instead of the whole hemisphere. This leaves behind the frontal and/or the occipital poles of the abnormal hemisphere while DISCONNECTING them from the rest of the brain through section of their white matter thus isolating them functionally.¹¹ In followup studies of up to four to 13 years, no symptoms of hemosiderosis have been found in a series of 14 patients receiving this operation but the effectiveness as to the elimination of seizures is considered to be only 49 percent as compared to 59 percent of a series of 27 patients that

received "total hemispherectomy."¹¹

The other procedure proposed to avoid this late complication of total hemispherectomies consists of mobilizing the convexity dura of the cavity left by the "total" hemispherectomy and tucking it against the mesial surface of the remaining hemisphere by anchoring it to the falx, the basal and tentorial dura, and plugging the foramen of Monro with muscle.¹ Since this procedure is in fact a security maneuver to a conventional "total" hemispherectomy, its outcome should be just as effective with respect to seizure alleviation, but a success in the avoidance of LATE complications is still to be evaluated.

Although hemispherectomy seems to be most effective in controlling seizures and the behavioral disorders accompanying infantile hemiplegia and even though its very late serious complications seem avoidable by using the partial or "functional" variant of the procedure it still has to be considered a very "big operation" requiring careful and well studied evaluation of its advantages vs its risks and especially its functional consequences (hemianopia). These very drawbacks have promoted modifications of the surgical procedure itself^{1, 11} and the application of alternative methods for the treatment of this condition (see below).

SECTION OF THE CORPUS CALLOSUM

Even though sectioning of the corpus callosum for the treatment of seizures was first attempted by Von Wagenen and Herren in 1940,¹² this procedure had very severe complications at the time. Later series of cases were treated with more extensive division of the interhemispheric commissural paths including the anterior commissure, the fornix, the hippocampal commissure and even the massa intermedia. Later Luesenhop⁵ used these operations in children and proposed it as an "alternative to hemispherectomy." The rationale for this procedure was that if seizure activity remained confined to one hemisphere, the opposite hemisphere is not

recruited in the attack through conduction of the abnormally timed impulses via the commissural paths. Patients suffering unilateral instead of bilateral convulsions would thus remain conscious during the unilateral seizure and avoid dangerous falls and trauma. Naturally this procedure has evolved with experience and sophistication of preoperative evaluation and new surgical techniques and tools, and it has become a less extensive undertaking which nowadays is almost free of severe complications.¹⁰ One has to realize, however, that callosotomy has to be considered only a palliative operation and that one should not demand of it a "cure" of the seizure disorder. Corpus callosotomy can be contemplated in instances where too severe functional effects are to be expected from a hemispherectomy. Such is the case, for instance, when the epileptogenic cortex is located on a hemisphere where language is demonstrated to reside through a carotid amytal test or when the lesion causing the seizures is producing only a minimal motor deficit. In general, the participation of both hemispheres in some generalized tonic, clonic and atonic seizures seems to be an important factor in their development, and in those cases corpus callosotomy has been found to reduce the number of crises.¹⁰ Some cases of improvement of complex partial seizures have also been documented after callosotomy, but also cases in which complex partial seizures were exacerbated have been found. In children, corpus callosotomy has more far reaching implications than in adults, and this depends on the age group or the stages of learning ability and brain functional plasticity evolution of the patient. For instance, patients with mixed dominance (one side of the brain being dominant for speech and the other side for hand motor ability) can suffer speech impairment after this operation. Other considerations have to be made in some cases like the fact that making children remain conscious during a seizure might be terrifying to them. In general, however, the deficits and the effects of a disconnection syndrome (to which most

patients end up adapting) are no different in children than in adults. Finally, it has to be noted that a corpus callosotomy can be made a first stage which does not exclude if necessary a hemispherectomy later on in cases where the effects of callosotomy prove unsatisfactory.

FRONTAL LOBECTOMY

Clinical episodes directly related to hypersynchronous electrical activity originating in one frontal lobe can be treated by surgical excision if they fulfill the criteria required for a condition to be considered surgically treatable seizure disorder mainly (a) if "resistant" to satisfactory medical management and (b) if the area of origin the epileptogenic disturbance can be removed without causing unacceptable functional deficits. This can usually be accomplished if the "motor" or precentral gyrus can be localized without difficulty during surgery especially under local anesthesia in order to spare it by drawing through electrical stimulation of the exposed cortex the motor map of "Penfield's Homunculus" and showing for the same purpose the position of Broca's area of speech in the dominant hemisphere. During the last 10 years we have also used somatosensory evoked potentials (SEP) to establish cortical landmarks. This technique consists of recording the electrical activity put out by the brain in response to transcutaneous painless stimulation of the median nerve contralateral to the hemisphere exposed by the craniotomy. By averaging the electrical transients that are time locked to the stimulus the computer can "disentangle" such responses from the ongoing EEG activity, and the postcentral gyrus can be localized UNDER GENERAL ANESTHESIA. We can locate then the "motor strip" as the gyrus in front of the one generating the SEPs and proceed with the removal confined to areas located in front of it. The technique of frontal lobectomy is quite straightforward and also the general principals of sparing important branches of the anterior cerebral artery irrigating the area of motor representation of the

opposite leg and supplementary motor cortex have to be observed. The greatest difficulty in these cases resides in demonstrating conclusively that the seizures to be treated do indeed originate in one frontal lobe. This represents a tremendous challenge both for the electroencephalographer and for the clinician in many cases. Even though seizures starting with contralateral turning of the head or of the head and eyes can have a lateral frontal origin close to areas six or eight of Broadman the types of clinical attacks produced by an epileptogenic frontal focus can be enormously complex. In these attacks usually alterations in motor behavior are predominant. They can go from simple, quite natural appearing and subtle turning of the head to the most bizarre and complex sequences of automatic movement like circling, running, fumbling or even sudden immobility or tonic/clonic manifestations. Quite often vegetative phenomena like flushing of the face, pupillary dilatation, piloerection, etc or apparently loss of contact, or forced thinking can occur.⁹ In one of our patients, inability to "concentrate in her thoughts" or to talk is the only manifestation of her minor frontal lobe seizures. Alterations in speech or speech related phenomena using stereotyped expressions like "oh boy" are common as are obscene or aggressive language. One of our patients started his seizures pronouncing the first three words of a popular song lyrics. In some cases abnormal sensations or disturbances in perception can also be initial manifestations of a frontal lobe originated seizure. In other instances, the initial phenomenon of these seizures is a sudden fall and not uncommonly a loss of consciousness. This extreme complexity and rich variety of manifestations of seizures of frontal origin derives from the fact that the frontal cortices are mostly "associative" in function and are very large and also very richly connected. It is actually difficult to ascertain whether the clinically observed phenomena are the results of abnormal activity in the confines of the frontal lobe itself or the expression of what that abnormal

activity elicits as stereotyped patterns of function in other areas connected to the frontal lobe.⁹ Some authors have placed emphasis on the powerful connections of the orbital frontal cortex of the frontal lobe with temporal lobe structures (temporal tip and amygdala through the uncinate fasciculus). Through seizures the frontal lobe expresses one of his functions which is triggering, organizing and adapting functions belonging to other lobes. Understandably then, the very difficult electroencephalographic task of establishing the actual anatomical site of origin of these seizures is a must.⁸ The generators of the hypersynchronous activity in frontal lobe seizures can be located in areas that are almost out of "reach" for the surface head EEG electrodes like deep in the interhemispheric fissure or on the orbital frontal surface or on the frontal opercula of the sylvian fissure. Surface EEG electrodes would "see," for example, activity coming either from temporal or orbital frontal cortices if located over the temples (electrodes F7 or F8 of the conventional EEG) or from right or left interhemispheric mesial frontal cortices (electrodes over the sagittal midline). These limitations have made it necessary to use specially located surface electrodes that can better reach activity coming from the orbital frontal cortex for instance. Still the electrical activity of very large areas of frontal lobe cortex can only be recorded through implanted types of electrodes which are inserted stereotactically into the frontal lobe (see article by C. Worthington).^{9, 10} These devices offer the advantage of allowing us not only to record but also to stimulate deeply located areas of the frontal cortex. At times, however, the last resort is the direct application of electrodes to the cortical surface in an electrocorticography during craniotomy. In cases where good documentation of a frontal origin of the seizures to be treated can be demonstrated, cure of the seizure disorder or satisfactory reduction and medical control of seizures can be achieved (Figure 3).⁹ Finally, in other instances part of the frontal and also part of the temporal lobe

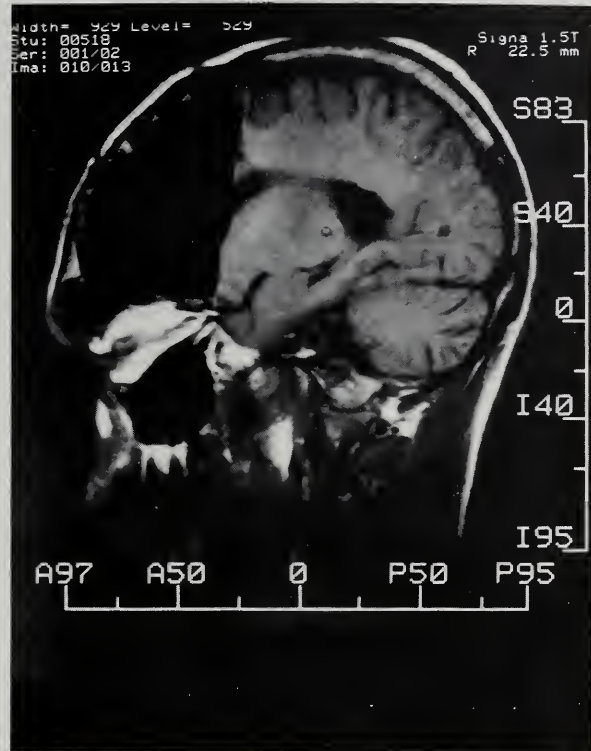


Figure 3. MRI four years after right frontal lobectomy for intractable major motor and minor seizures. Today only some very brief (seconds) minor episodes. On anticonvulsants.

have to be removed to achieve this result for both these areas can be involved in generating the abnormal activity originating these complex clinical episodes. □

REFERENCES*

1. Adams CBT.: Hemispherectomy a modification. *J Neurol Neurosurg Psychiat* 1983; 46: 617-619.
2. Dandy WE. Removal of right cerebral hemisphere for certain tumors with hemiplegia. Preliminary Report. *J.A.M.A.* 1928; 90: 823-25.
3. Krynauw J. Infantile hemiplegia treated by removing one cerebral hemisphere. *Neurol Neurosurg Psych* 1950, 13: 243-67.
4. L'hermitte, L'ablation. Complete de 1 hemisphere droit dans le cas de tumeur cerebrale localisee campliquee de hemiplegie. La decerebration suprathermique unilaterale chez 1 homme. *L Encephale* 1928, 23: 314-23.
5. Luessenhop AJ. Interhemispheric commissurotomy (The split brain operation) as an alternate to hemispherectomy for control of intractable seizures. *Am Surg* 1970, 36: 265-8.
6. McKenzie KG. (1938). Cited by Williams DS and Scott JW. The functional responses of the sympathetic nervous system of man following cortication

- hemide. J Neurol Psychiat 1939, 2: 313-22.
7. Noetzel H. Diffusion von Blutfarbstoff in der internea Rondgone und ausseren Oberflache des Zentral nerven systems bei subarachnoidaler Blutung. Arch Psychiatr 1958, 111: 129-38.
 8. Quesney LT. Extracranial EEG evaluation. In: Engel J, Ed. Surgical Treatment of the Epilepsies. New York: Raven Press, 1987.
 9. Rasmussen T. Characteristics of pure culture frontal lobe epilepsy. Epilepsia 1983, 24: 482-93.
 10. Spencer DD. and Spencer SS. Corpus callosotomy in the treatment of medically intractable secondarily generalized seizures of children. Cleveland Clinic J Med 1989, 56 Suppl Pt 1: 569-78.
 11. Timper P, Anderman T, Villemure JG, Rasmussen TB, Quesney LF. Functional hemispherectomy for treatment of epilepsy associated with hemiplegia. Ann Neurol 1988, 24: 27-34.
 12. Van Wagenen WP and Herren RY. Surgical division of commissural pathways in the corpus callosum. Arch Neurol Psychiat 1940, 44: 740-59.
- *This is an abbreviated reference list; the author will gladly supply a more complete one upon request.

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CHILDHOOD EPILEPSY: AN OVERVIEW

KENTON R. HOLDEN, M. D.*

Over the last ten years there have been significant gains in the understanding and management of childhood epilepsy. Epilepsy is a chronic disorder characterized by recurrent (two or more) seizures that commonly recur unpredictably in the absence of consistent provoking factors. A seizure is defined as a discrete clinical event that reflects a temporary physiologic dysfunction of the brain characterized by abnormal neuronal discharges associated with a change in functioning of the patient.¹ However, not every paroxysmal event is a seizure.

Many disorders mimic epilepsy, especially episodes that have been induced by acute systemic metabolic disturbances, acute central nervous system infection or insult, fevers, migraine, cardiovascular events, movement disorders, gastroesophageal reflux, breath-holding spells and psychological disorders.² Neonatal seizures and febrile seizures in children, even when recurrent, do not constitute epilepsy. Meticulous attention to the details of the events, with laboratory data which support the clinical picture, is usually sufficient for an accurate diagnosis.

Epilepsy is common in the pediatric population. The prevalence of active epilepsy in the general population is between 4.3 and 9.3 per 1000.¹ This means that approximately two million people in this country have active epilepsy. Epilepsy is more common in children than adults with about 70 to 80 percent of all active epilepsy beginning during the childhood years. The two most likely times of onset are during the early toddler years and during the school-age preadolescent years. The practitioner should remember that while epilepsy is a chronic disorder, many children,

with the aid of treatment, will "outgrow" their seizures.

When initially evaluating a child after he has had his first seizure or seizures, it is imperative to determine as accurately as possible the seizure type. If seizures are recurrent, most of the seizures should be similar unless a mixed type of seizure disorder is involved. One needs to classify the seizure disorder at this point. The International Classification of Epileptic Seizures is currently the most widely-accepted classification. Using this will be helpful in discussing the diagnosis, treatment plan and prognosis with the child's parents, caregivers and school personnel. This classification is based on the clinical seizure manifestations and EEG findings. The two broad categories which include most seizures are (1) partial seizures (seizures which begin focally and may or may not have altered consciousness) and (2) generalized seizures (seizures which are bilaterally symmetrical, do not have a focal onset, and are accompanied by unconsciousness during the event). Additionally, epileptic syndromes have been defined for many of the childhood seizure disorders and may help further with parental counseling. In contrast to a specific disease, however, a clinically-manifested syndrome can be the overt result of underlying etiologies which may differ from one another and may have differing prognoses. An abbreviated form of the classification system is found in Tables I and II.²

The treatment of childhood seizure disorders has seen many dramatic changes in the last five years. Not since the advent of antiepileptic drug (AED) therapy in the late 1800s and early 1900s when all seizure patients were treated at the onset of their seizure disorders has there been such a reversal in thinking and therapy. The questions of efficacy and safety of the AEDs are now

*Clinical Director, Division of Pediatric Neurology, Departments of Neurology and Pediatrics, Medical University of South Carolina, Charleston, SC 29425; Charleston Epilepsy Program.

TABLE I
CLASSIFICATION OF EPILEPTIC SEIZURES

PARTIAL SEIZURES:

- Simple partial seizures (consciousness preserved)
 - With motor signs (jacksonian, adverse)
 - With somatosensory or special sensory symptoms
 - With autonomic symptoms or signs
 - With psychic symptoms
- Complex partial seizures (consciousness impaired)
 - Simple partial onset followed by impaired consciousness
 - Impaired consciousness at onset
- Secondarily generalized seizures
 - Simple partial seizures evolving to generalized tonic-clonic seizures
 - Complex partial seizures evolving to generalized tonic-clonic seizures
 - Simple partial seizures evolving to complex partial seizures, then to generalized tonic-clonic seizures

GENERALIZED-ONSET SEIZURES:

- Tonic-clonic seizures
 - Absence seizures
 - Atypical absence seizures
 - Myoclonic seizures
 - Tonic seizures
 - Atonic seizures
-

TABLE II
CLASSIFICATION OF EPILEPTIC SYNDROMES (Modified)

LOCALIZATION-RELATED (FOCAL) EPILEPSIES

- Idiopathic:
 - Benign focal epilepsy of childhood
- Symptomatic:
 - Chronic progressive epilepsy partialis continua
 - Temporal-lobe epilepsy
 - Extratemporal epilepsy

GENERALIZED EPILEPSY

- Idiopathic:
 - Benign neonatal convulsions
 - Childhood absence epilepsy
 - Juvenile myoclonic epilepsy
 - Other generalized idiopathic epilepsy
 - Cryptogenic or Symptomatic:
 - West syndrome (infantile spasms)
 - Early myoclonic encephalopathy
 - Lennox-Gastaut syndrome
 - Progressive myoclonic epilepsy
 - Special Syndromes:
 - Febrile Seizures
 - Isolated Seizure Events
-

being debated, and whether or not to treat every first or even second unprovoked seizure, even following status epilepticus, is now very controversial. Recent studies argue persuasively that children having first afebrile seizures should not be routinely treated even if some risk factors for recurrence are present.^{3,4} This is primarily related to the significant cognitive and behavioral side effects of AEDs as well as the lack of recurrence in the majority of these children. However, in Shinnar's study, a careful medical and neurological evaluation revealed that there had actually in a number of cases been an episode prior to the one originally considered to be the first episode. Investigation revealed a 33 percent incidence of previous non-convulsive seizures such as absence, myoclonic, or complex partial seizures. The practitioner needs to be diligent in history-taking to assure that the episode which is recorded as the first unprovoked seizure has, in fact, not been preceded by other convulsive events not previously recognized as such by the parents. However, most of the studies define a first unprovoked seizure as one or more seizures of variable duration, including status epilepticus, which occur within a 24-hour period in a child over one to two months of age not associated with an acute illness, fever, trauma, toxic or metabolic encephalopathy. Recurrence risks for further seizures in this population are 27 to 40 percent.^{3,4} The only findings that lean one towards a higher recurrence risk of seizures are children with neurological and EEG abnormalities who are felt to have remote symptomatic seizures and are not normal neurologically by history or examination prior to their first seizure. The presence of an abnormal EEG also increases the chance for recurrence of seizures to just over 50 percent in children, but this is not much greater than the incidence of side effects of AEDs in the pediatric population.

While phenobarbital and phenytoin have been the most widely used AEDs during the past century, monotherapy with either valproic acid or carbamazepine is increasingly

becoming the drug treatment of first choice for a variety of childhood seizure disorders. Now that over 20 years of worldwide clinical experience with both of these drugs is available, it is apparent they have in general fewer adverse side effects, particularly in cognitive skills, and are probably more effective as monotherapy, than either phenobarbital or phenytoin, or even both used as polypharmacy.⁵ The drugs usually recommended for various childhood seizure types after evaluating the risks of the medicines versus benefits of treatment are shown in Table III. The ideal goal in the treatment of epilepsy should be the achievement of complete control or reduced frequency of seizures with minimal side effects. When treatment is initiated, the most appropriate drug is chosen and the dosage increased until control is achieved or toxicity is reached. If the seizures are not controlled, the next most appropriate drug is chosen and added while concomitantly weaning the patient off of the first drug. With proper monitoring for compliance and toxicity, effective control is possible in 75 to 80 percent of patients with epilepsy. AEDs must be utilized rationally and with patience. There is still a place for polypharmacy in the treatment of epilepsy following unsuccessful trials of monotherapy. The entire patient (not just blood levels) must be considered when observing for signs of toxicity. The final decision about whether to treat and with which medication must be made individually for each patient, taking into account the risks of the therapy versus the likelihood of further seizures and the potential for psychological, educational, vocational and physical consequences.

In spite of the use of these newer AEDs with increased understanding in the pediatric population, many children continue to have seizures despite optimal medical therapy. In these cases, epilepsy surgery needs to be considered as a possible alternative for therapy rather than accepting a life-long uncontrolled seizure disorder as a fait accompli. Of the approximately 150,000 people who develop

TABLE III
DRUGS USED IN THE CONTROL OF EPILEPTIC DISORDERS

Primary Generalized Tonic-Clonic or Tonic/Clonic alone	Generalized Simple Absence ("Petit Mal")	Simple Partial/Complex Partial ("Psychomotor or Temporal Lobe") and Secondarily Generalized Tonic-Clonic	Primary Generalized Myoclonic, Atonic-Akinetic, "Atypical" Absence
Valproate (Depakene/Depakote)	Ethosuximide (Zarontin) Valproate	Carbamazepine+ Valproate++	Valproate++ Clonazepam
Carbamazepine+ (Tegretol)	Clonazepam (Klonopin)	Primidone Phenytoin	Methsuximide Acetazolamide
Phenobarbital			
Primidone (Mysoline)	Methsuximide (Celontin)	Phenobarbital	Ketogenic Diet
Phenytoin (Dilantin)	Acetazolamide (Diamox)		

+ Not FDA approved for children under 6 years of age

++ Not FDA approved for this indication

NB: Use Valproate with extreme caution under 2 years of age because of risk of acute hepatotoxicity

epilepsy each year, 10 to 20 percent will eventually have medically intractable epilepsy.⁶ Many of these begin in childhood, chronically disrupt the child's and family's life, and deny the child the ability to reach his full potential. Predictors of intractable epilepsy include, but are not limited to, the presence of a structural central nervous system lesion, clinically apparent neurologic deficits, and chronic uncontrolled partial epilepsy or mixed seizure types. Currently, only about 500 operations are performed in the United States each year for intractable epilepsy, but the data show there are five to ten times that number who might be candidates.⁷ This suggests that epilepsy surgery should be considered earlier in the course of medically intractable seizure patients.

In spite of these newer ideas and treatment approaches available for the child with epilepsy, it is still the primary care physician who is the most influential factor in the suc-

cessful management of these children. It is at the time of the first or second seizure that many of the decisions are made regarding treatment and possible referral to a tertiary medical center. Although pediatric neurological consultation is not always necessary, especially for simple febrile seizures, it is usually necessary for recurrent febrile seizures and unprovoked afebrile seizures. These consultations reassure parents, share the burden of responsibility for optimal patient care, and may uncover points in the history that an initial office visit may not reveal. Practitioners need continued awareness of how frightening it is to parents to observe a child's first seizure, especially since it frequently occurs at home without warning and may appear that the child is dying. It is difficult to reassure parents after such an experience. Specialists who see these children in consultation need continued awareness that in many cases the primary

care physician has an established relationship with the family and usually is better able to counsel the family in the context of their situation, after having been provided information by the consultant, than is the consultant acting independently. □

REFERENCES

1. Hauser WA, Hersdorffer DC. Epilepsy: frequency, causes, and consequences. New York, NY: Demos Publications; 1990: 1-51.
2. Schener ML, Pedley TA. The evaluation and treatment of seizures. *N Engl J Med.* 1990; 323:1468-1474.
3. Hauser WA, Anderson VE, Loewenson RB, McRoberts SM. Risk of seizure recurrence after a first unprovoked seizure. *N Engl J Med.* 1982; 307:522-528.
4. Shinnar S, Berg AT, Moshe SL, Petix M, Maytal J, Kang H, Goldensohn ES, Hauser WA. Risk of seizure recurrence following a first unprovoked seizure in childhood: A prospective study. *Pediatrics.* 1990; 85:1076-1085.
5. Vining EPG, Mellits ED, Dorsen MM, Cataldo MF, Quaskey SA, Spielberg SP, Freeman JM. Psychologic and behavioral effects of antiepileptic drugs in children: A double-blind comparison between phenobarbital and valproic acid. *Pediatrics.* 1987; 80(2):165-174.
6. NIH Consensus Conference-Surgery for Epilepsy. *JAMA.* 1990; 264(8):729-733.
7. Dreifus FE. Goals of surgery for epilepsy. In: Engel J. *Surgical Treatment of the Epilepsies.* New York, NY: Raven Press; 1987:31-49.

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SURGERY FOR EPILEPSY IN CHILDREN

BRUCE B. STORRS, M. D.*

In the United States there are approximately 360,000 patients with focal epilepsy which is unresponsive to medication. Approximately 60,000 of these patients are surgical candidates and most of these patients have the onset of epilepsy in childhood.⁷

The accurate classification of seizure type and location allows the results of surgery for these lesions to be analyzed independently and the bias of patient selection to be removed from series of patients.^{3,4,5,6}

Much attention has been given to these details over the last 15 years with the increased use of interictal (between seizure) electrodes in the epidural and subdural spaces as well as deep within the brain.¹

Stimulation of the cortex in the interictal period has allowed the mapping of the vital areas of the brain and the relationship of the pathological regions to the normally functioning cortex and deep structures to be assessed. This new understanding of the surgery for epilepsy has allowed us to examine the indications for and the results of surgery in very specific ways previously unavailable.^{3,5,6,7}

Children with focal epilepsy refractory to non-surgical therapy may have one of the following as the etiology:

1. Infantile hemiplegia
2. Mesial temporal sclerosis
3. Focal cortical dysplasia
4. Tuberous sclerosis
5. Sturge-Weber-Dimitri Syndrome
6. Post-traumatic

Surgical treatment in this group of conditions will be successful in 65 percent of patients. Good result is defined as cessation of seizures with or without medication.

Seventy-five percent of children with focal cortical dysplasia or mesial temporal sclerosis will have good results with surgery. If surgery is performed on the temporal lobe for focal cortical dysplasia or mesial temporal sclerosis, 75 percent of children are cured.⁸

One of the most common causes of focal epilepsy in childhood is brain tumor. Surgical removal of these usually low grade lesions stops the seizures in 80 percent of patients.⁷

More generalized procedures may also be helpful in uncontrollable childhood epilepsy when drop attacks are a prominent feature with repeated injury to the patient. Section of the corpus callosum may be helpful in controlling the problem. This procedure will not cure the condition but will decrease the frequency of the attacks.

Hemispherectomy or extensive cortical resection may be very helpful for Sturge-Weber-Dimitri syndrome (Encephalofacial angiomatosis) or in infantile hemiplegia with a large area of dysplastic cortex.

SUMMARY

Focal epilepsy in childhood may be associated with pathological entities that are amenable to surgical therapy with excellent results.

Focal epilepsy should be investigated by CT scanning or magnetic resonance imaging performed with and without contrast material.

If seizures are uncontrollable or the lesion is suspicious for neoplasm, surgical therapy should be strongly considered.

Epilepsy surgery in children may be safely performed with excellent results in appropriate cases. □

*Department of Neurosurgery, Medical University of South Carolina, 171 Ashley Avenue, Charleston, SC 29425; Charleston Epilepsy Program.

REFERENCES

1. Wheelles J. Evaluation of children for epilepsy surgery. *Pediatr Ann* (United States) Jan 1991, 20(1), 41, 45-6, 48-9.
2. Holmes GL, King DW. Epilepsy surgery in children. *Wein Klin Wochenschr* Mar 30 1990, 102 (7) 189-197.
3. Larskins MV, Hahn JF. Epilepsy surgery in chilchildren. *J Child Neurol* Jul 1988, 3 (3) 155-166.
4. Luders H, Dinner DS, Morris HH 3d, Wyllie E, Godoy J. EEG evaluation for epilepsy surgery in children. *Cleve Clin J Med* 1989, 56 Suppl Pt 1, S53-61; discussion S79-83; *Cleve Clin J Med* 1989, 56 Suppl Pt 2, S266-8.
5. Green RC, Adler JR, Erba G. Epilepsy surgery in Dinner DS, Rothner AD, Erenberg G, Cruse R, Friedman D, Hahn J, et al. Subdural electrodes in the evaluation for epilepsy surgery in children and adults. *Neuropediatrics* May 1988, 19 (2), 80-86.
6. Wyllie E, Luders H, Morris HH 3rd, Lesser RP, dren and young adults. *Cleve Clin J Med*, 1989, 56 Suppl Pt 2, S266-8.
7. Goldring S. Pediatric epilepsy surgery. *Epilepsia* 1987, 28 Suppl 1, S82-102.
8. Davidson S, Falconer MA. Outcome of surgery in 40 children with temporal-lobe epilepsy. *Lancet* June 7 1974, 1 (7919), 1260-1263.



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A GREAT WAY TO SERVE

FUNCTIONAL IMAGING OF EPILEPTIC FOCI WITH PET AND SPECT*

JANE L. TYLER, M. D.**

CHRISTOPHER W. STARR, PH.D.

An estimated 50,000 patients in the United States have temporal lobe epilepsy which is poorly responsive to medical therapy. As surgical treatment (temporal lobectomy) has become more refined, there is an increased need for more precise localization of an epileptogenic focus if removal of the lesion is to be successful. In many cases, surface electroencephalographic (EEG) readings are ambiguous, with multiple abnormalities found in both hemispheres. Depth electrodes can be implanted, but this is an invasive procedure, often with continued inconclusive readings. Anatomical imaging with computed tomography (CT) or magnetic resonance imaging (MRI) often fails to reveal a structural abnormality.¹ For these reasons, recent attention has focused on functional imaging with single-photon emission computed tomography (SPECT) and positron emission tomography (PET) to define the seizure focus and gain insight into the pathophysiologic mechanisms of epilepsy.

PET IMAGING IN EPILEPSY

More than 12 years of experience have been accumulated in PET imaging of epileptic foci. Positron-emitting isotopes such as Oxygen-15, Fluorine-18 and Carbon-11 are ideally suited for incorporation into a variety of pharmacologic and biologic substances. The majority of PET work in epilepsy to date has been studying cerebral glucose metabolism using the glucose analog 2-deoxy-2 fluoro-D-

glucose (FDG) labelled with fluorine-18. Recent technological advances in PET have produced scanners capable of spatial resolutions in the order of 3-5mm, making visualization of small lesions more reliable.

Early in the last decade, researchers at UCLA reported finding decreased cerebral glucose metabolism at the site of seizure foci.² Subsequent studies confirmed the finding of an interictal decrease, and an ictal increase in glucose metabolism at the sites of seizure foci (Figures 1 & 2).³⁻⁶ Thus FDG-PET can be valuable in identifying the laterality of the seizure origin. In fact, it has been proposed that pre-operative PET scanning should replace invasive monitoring in anterior temporal epilepsy when findings of PET are in agreement with scalp-sphenoidal EEG recordings.⁷

It has been noted that the region of cerebral hypometabolism often extends beyond the site of the seizure focus itself (Figure 3), often involving distant portions of the frontal and parietal cortex, and the ipsilateral basal ganglia and thalamus.^{8,9} After successful resection of the seizure focus, this remote suppression of cerebral metabolism usually disappears. PET measurements of cerebral blood flow (CBF) and cerebral metabolic rate for oxygen (CMR_{O₂}) using oxygen-15 have shown variable results,^{10,11} and therefore have not been widely used in the clinical evaluation of seizure foci.

Recent PET research in epilepsy has gone beyond the metabolic imaging discussed, focusing on the roles that excitatory and inhibitory neurotransmitters and their receptors play in the origin of seizures. The majority of this work has involved the study of opi-

*From the Department of Radiology, Medical University of South Carolina, Charleston, SC.

**Address correspondence to Dr. Tyler at the Department of Radiology, Medical University of South Carolina, 171 Ashley Avenue, Charleston, SC 29425.

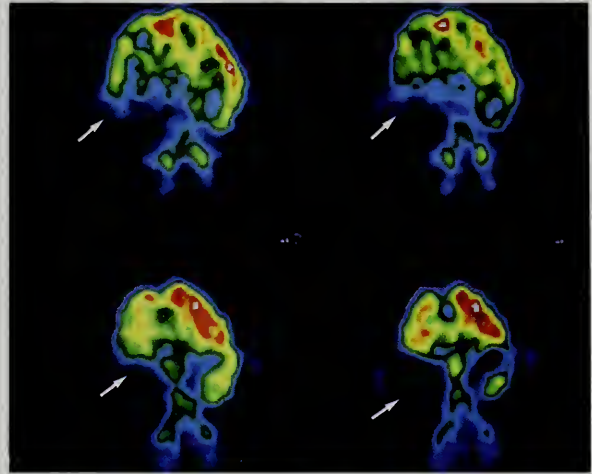


Figure 1. The EEG mapping in this epileptic patient with interictal surface recordings suggested bitemporal foci, while depth electrode recordings indicated a left temporal focus (A). The FDG-PET study (B), however, clearly localized the abnormality to the right temporal lobe (arrows), where markedly decreased glucose metabolism is evident.

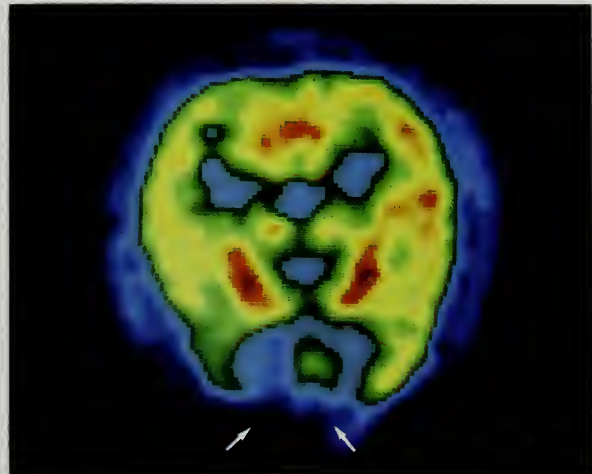
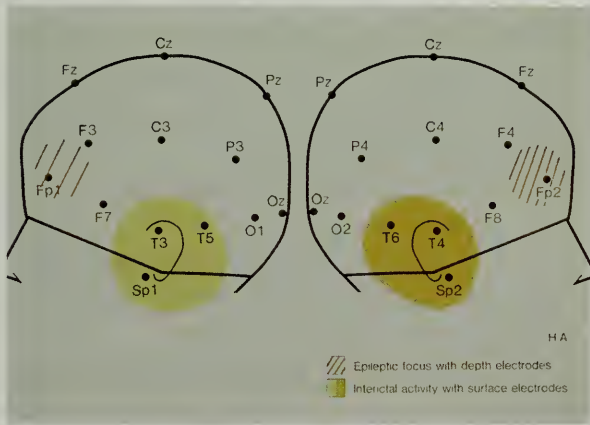


Figure 2. EEG mapping in this patient (A) showed bitemporal abnormalities with surface recording, while depth electrode recordings indicated bifrontal activity. The FDG-PET scan (B) agreed with the depth electrode findings, showing severely decreased cerebral glucose metabolism in both frontal lobes (arrows).

ate peptides, and their role in the inhibition of seizures. Experimental data have shown that the opiate antagonist naloxone is capable of increasing epileptiform discharges in patients with partial complex seizures.¹² The mu-receptor-selective opiate agonist carfentanil, labelled with carbon-11, has been used to image and quantify these receptors in epileptic patients. Significantly elevated levels of ^{11}C -carfentanil have been found in the temporal neocortex ipsilateral to the seizure focus. It is postulated that increased opiate binding in epileptic foci represents mobilization of an endogenous anticonvulsant mechanism, with an attempt to limit seizure propa-

gation by endogenous opioids.

It is interesting to note that elevated binding of ^{11}C -carfentanil on PET has correlated with areas of decreased glucose metabolism on FDG scans.¹³ In one preliminary report, the combined use of ^{18}F FDG and ^{11}C -carfentanil allowed the correct lateralization of the seizure focus in 93 percent of patients,¹⁴ suggesting a complimentary nature of metabolic and receptor imaging.

The high-affinity opiate agonist ^{11}C -diprenorphine has also been used for imaging in man, non-selectively labelling mu, kappa and delta opiate receptors.^{14,15} Recent studies have also examined benzodiazepine binding

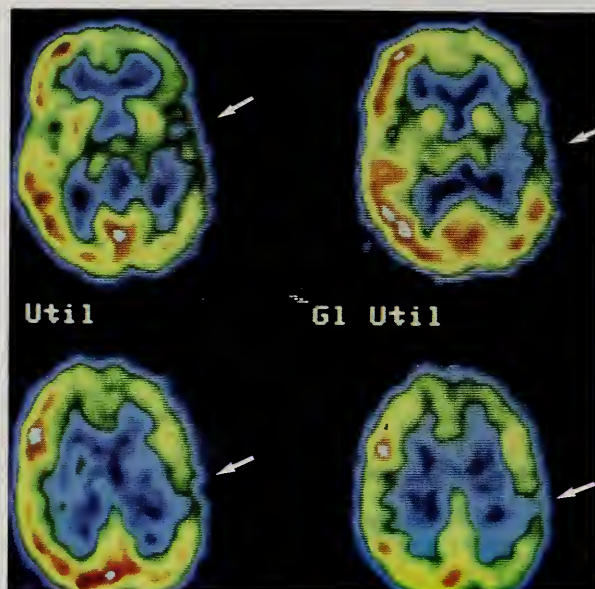


Figure 3. This patient with a temporal lobe focus and right temporal hypometabolism on the FDG-PET scan also demonstrated remote suppression of cerebral metabolism, with decreased glucose metabolism in the high right frontal and parietal regions (arrows).

in seizure foci, in an indirect attempt to study the involvement of the neurotransmitter gamma-amino-butyric acid (GABA) in epilepsy. Using ^{11}C -Ro-15-1788 PET imaging, a significant decrease in receptor binding was found in epileptic foci.¹⁶ Additional research continues examining other neurotransmitters for potential use in PET imaging.

Other research has focused on the possible role of the dopaminergic system in epilepsy. In brain, DOPA is formed by the reaction of tyrosine hydroxylase with tyrosine. Studies in rats have shown that electroconvulsive seizures elevate cortical tyrosine hydroxylase activity, especially in the locus ceruleus where catecholaminergic fibers to the cortex originate. Human seizure foci removed at surgery have shown decreased tissue levels of alpha-1 adrenoceptors and elevated tyrosine hydroxylase activity.¹⁷ The dopaminergic system can be imaged with PET using ^{18}F -fluoro-DOPA, and ^{11}C -methyl-spiperone (for D2 receptors). Work in this area is ongoing.

SPECT IMAGING IN EPILEPSY

Early work with SPECT was somewhat hampered by the lack of truly "physiologic" phar-

maceuticals suitable for radioactive labelling and imaging with SPECT. However, with the advent of ^{123}I -labelled amphetamine derivative such as ^{123}I -n-isopropyl amphetamine (IMP) and later $^{99\text{m}}\text{Tc}$ -labelled hexamethyl propylene amine oxime (HMPAO), reliable studies of cerebral blood flow could be obtained. These substances cross the intact blood-brain barrier and are distributed proportionally to regional blood flow, and results using the two compounds are similar.

With SPECT Scanning using IMP and HMPAO, the patient radiation dose is greater, and the diagnostic information on cerebral function is less than that obtained with PET due to limited spatial resolution, photon attenuation and scatter.^{18,19} Recent advances in SPECT have provided increased spatial resolution, as high as 6-8mm with parallel hole collimation and 3.8mm with fan and cone beam collimation.^{20,21} Furthermore, the increased data acquisition rate of 3-headed SPECT systems makes practical the doubling of the spatial resolution of SPECT, rivaling PET. Advances in attenuation and scatter correction for SPECT will further improve the resolution of epileptic pathology.

Interictal SPECT studies demonstrate decreased regional cerebral perfusion at the site of the seizure focus in approximately 73 percent of cases.²² There is some variability in reported findings, however,²³⁻²⁶ and the combined findings of decreased perfusion interictally and increased perfusion ictally may better localize the focus (Figure 4).^{22,27}

In addition to helping localize the seizure focus, SPECT may also have prognostic value. Recent work suggests that SPECT/EEG congruence may predict outcome of temporal lobectomy in children,²⁸ and SPECT may help predict post-operative verbal memory function in adults.²⁹

The future of neuroimaging in focal epilepsy includes stereotactic imaging procedures to register the anatomical images of CT and MRI and physiological images of PET and SPECT for surgical treatment planning. Stereotactic SPECT imaging for epilepsy is

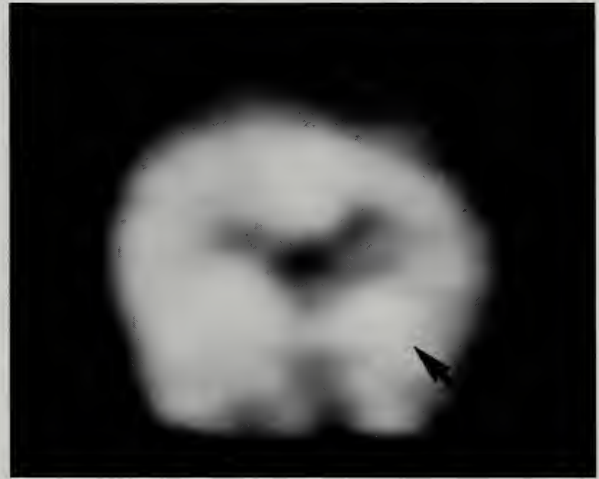
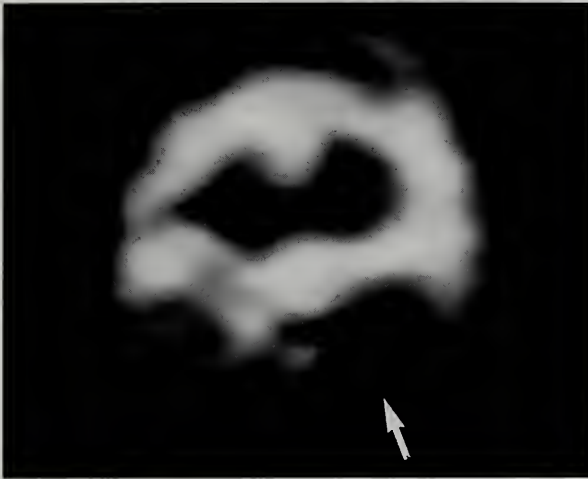


Figure 4. Interictal HMPAO SPECT of this patient (A) showed decreased perfusion in the left temporal lobe (arrow) confirming the left temporal focus determined by depth electrode recordings. The corresponding post-ictal SPECT was normally to hyper-perfused in the left temporal lobe (arrow) in this case.

presently under development in the combined epilepsy program in Charleston. A table adaptor has been developed which allows the Leksell Stereotactic frame (Elekta Instruments, Tucker, Georgia) to be used with the SPECT camera. The frame is applied for the stereotactic placement of implanted depth electrodes for recording and subsequent localization of epileptogenic foci.

Following CT or MRI, a SPECT scan is done using HMPAO. Indium¹¹¹ is used as a second gamma radiation source in the fiducial plates, providing the identifying marks that the computer uses to localize a target. By registering the fiducial markers seen on MRI scan (or those seen on CT), with the In¹¹¹-filled fiducials from SPECT, point-to-point correlation of the MRI, CT and SPECT scans is possible. The Montreal-Leksell computer program is used to localize the intracerebral targets in CT and MRI studies, and custom software allows the SPECT study to be superimposed on the CT or MRI study. Thus, anatomic lesions identified and targeted stereotactically can be directly correlated with physiologic abnormalities.

SUMMARY

Functional imaging with PET and SPECT provides valuable information, helping lateralize and localize the site of an epileptogenic focus. SPECT imaging has been somewhat

hampered by lower resolution than PET, and the lack of true "metabolic" radiopharmaceuticals, however SPECT perfusion studies may also help localize the seizure focus. At present, PET metabolic imaging with FDG is the most sensitive functional imaging modality for identifying epileptogenic foci. However with the current availability, lower cost and improved visualization, the diagnostic and prognostic efficacy of SPECT should increase. □

ACKNOWLEDGMENT

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REFERENCES

1. Cordes M, Christe W, Henkes H, et al. Focal epilepsies: HM-PAO SPECT compared with CT, MR, and EEG: J Comput Assist Tomogr 14 (3):402-409, 1990.
2. Kuhl DE, Engel J Jr, Phelps ME, Selin C. Epileptic patterns of local cerebral metabolism and perfusion in humans determined by emission computed tomography of ¹⁸FDG and ¹³NH₃. Ann Neurol 8:348-360, 1980.
3. Engel J Jr, Kuhl DE, Phelps ME, Mazziotta JC. Interictal cerebral glucose metabolism in partial epilepsy and its relation to EEG changes. Ann Neurol 12:510-517, 1982.
4. Mazziotta JC, Engel J Jr. The use and impact of positron computed tomography scanning in epilepsy. Epilepsia 25:S86-S104, 1984.
5. Theodore WH, Fishbein D, Dubinsky R. Patterns of cerebral glucose metabolism in patients with

- partial seizures. *Neurology* 38:1201-1206, 1988.
6. Ochs RF, Gloor P, Tyler JL, et al. Effect of generalized spike-and-wave discharge on glucose metabolism measured by positron emission tomography. *Ann Neurol* 21:458-464, 1987.
7. Tyler JL, Worsley K, Gloor P, et al. Remote hypometabolic effects of seizure disorders. *J Nucl Med* 29:S920-S921, 1988.
8. Sachellares JC, Siegal GJ, Aboukhalil BW, et al. Differences between lateral and mesial temporal metabolism interictally in epilepsy of mesial temporal origin. *Neurology* 40:1420-1426, 1990.
9. Engel J Jr, Henry TR, Risinger MW, et al. Presurgical evaluation for partial epilepsy: relative contributions of chronic depth-electrode records versus FDG-PET and scalp-sphenoidal ictal EEG. *Neurology* 40:1670-1677, 1990.
10. Bernardi S, Trimble MR, Frackowiak RSJ, et al. An interictal study of partial epilepsy using positron emission tomography and the 0-15 inhalation technique. *J Neurol Neurosurg Psychiatry* 46:473-477, 1983.
11. Yamamoto YL, Ochs R, Ammann W, et al. Changes of energy metabolism and regional cerebral blood flow studied by positron emission tomography in the interictal phase of partial epilepsy. *Acta Neurochirurgica* 33:35-46, 1984.
12. Molaie M, Kadzielawa K. Effect of naloxone infusion on the rate of epileptiform discharges in patients with partial complex seizures. *Epilepsia* 30:194-200, 1989.
13. Frost JJ, Mayberg HS, Fisher RS, et al. Mu-opiate receptors measured by positron emission tomography are increased in temporal lobe epilepsy. *Ann Neurol* 23:231-237, 1988.
14. Frost JJ, Mayberg HS, Sadzot B, et al. Differential regulation of mu and non-mu opiate receptors in temporal lobe epilepsy assessed by C-11 diprenorphine, C-11 carfentanil and PET. *J Nucl Med* 30:S750-S751, 1989.
15. Sadzot B, Price JC, Mayberg HS, et al. Quantification of human opiate receptor concentration and affinity using high and low specific activity [^{11}C] diprenorphine and positron emission tomography: *J Cereb Blood Flow Metab* 11(2):204-219, 1991.
16. Savic I, Roland P, Sedvall G, et al. In vivo demonstration of reduced benzodiazepine receptor binding in human epileptic foci. *Lancet* 2:863-866, 1988.
17. Sherwin A, Robitaille Y, Quesney F et al. Excitatory Amino acids are elevated in human epileptic cerebral cortex. *Neurology* 38:920-923, 1987.
18. Engel J. The role of neuroimaging in the surgical treatment of epilepsy: *Acta Neurol Scand Suppl* (Denmark) 117:84-89, 1988.
19. Duncan R, Patterson J, Hadley DM, et al. CT, MR and SPECT imaging in temporal lobe epilepsy: *J Neurol, Neurosurg Psychiatry* 53:11-15, 1990.
20. Manglos, SH, Jaszczak RJ, Greer KL. Cone Beam SPECT reconstruction with camera tilt: *Phys Med Biol* 34 (5):625-631, 1989.
21. Tsui BMW, Gullberg GT, Edgerton ER, et al. Design and clinical utility of a fan beam collimator for SPECT imaging of the head: *J Nucl Med* 27:810-819, 1986.
22. Shen W, Lee BI, Park H-M, et al. HIPDM-SPECT brain imaging in the presurgical evaluation of patients with intractable seizures. *J Nucl Med* 31:1280-1284, 1990.
23. Sakai F, Meyer JS, Navitomi H, et al. Regional cerebral blood flow and EEG in patients with epilepsy. *Arch Neurol* 35:648-657, 1978.
24. Morris HH, O'Sonnell JK, Luders H, et al. ^{123}I HIPDM single photon emission computed tomography (SPECT) in intractable epileptic patients: correlations with EEG findings. *Neurology* 38 (suppl 1):279, 1988.
25. Sussman MM, Kaplan LR, LaManna MM, et al. SPECT for visualization of the dysfunction from epileptogenic foci. *Epilepsia* 27:642, 1986.
26. Rowe CC, Berkovic SF, Austin MC, et al. Visual and quantitative analysis of interictal SPECT with Technetium-99m-HMPAO in temporal lobe epilepsy. *J Neurol Med* 32:1688-1694, 1991.
27. Smith DF, Smith FW, Knight RSG, et al. $^{99}\text{Tc m}$ HMPAO single photon emission computed tomography in partial epilepsy: a preliminary report: *British J Radiology* 62:970-973, 1989.
28. O'Tuama LA, Holmes GL, Black PMcL, et al. HMPAO SPECT versus EEG localization of foci in childhood onset epilepsy: clinical correlations and relation to outcome. *J Nucl Med* 32:912-913, 1991.
29. Gruwald F, Durwen HF, Bockisch A, et al. Technetium-99m-HMPAO brain SPECT in medically intractable temporal lobe epilepsy: a postoperative evaluation. *J Nucl Med* 32:388-394, 1991.

THE PATIENT WITH EPILEPSY — A NURSING PERSPECTIVE*

JULIANNE H. KHOURY, R. N., M. S. N.**

CATHERINE W. SEABROOK, R. N., B. S. N., C. N. R. N.

BONNIE M. MUNTZ, R. N., B. A., B. S. N.

As epilepsy itself is a multifaceted disorder, so nursing the patient who has epilepsy is an extremely varied task. Does one adopt the role of caregiver, protector, and counselor? Or the role of taskmaster giving the patient lists of things which he or she must do? Or that of teacher using pamphlets, tapes, and questionnaires?

For the nurse, answers to these questions lie with each patient. Different patients have different needs and these needs will change from day to day.

A patient having multiple seizures will need to be cared for, one with questions or with inadequate knowledge should be taught, and one who is extremely dependent must be encouraged to do things on his own. In addition, family members have their own needs which the nurse must try to fill. They frequently have to be taught behaviors which they can use both to support the person with epilepsy and to create a healthy climate for their own well-being.

Epilepsy, a chronic disorder, has traditionally been treated in a doctor's office or university clinic, both of which are outpatient settings. Currently, however, many persons with epilepsy which cannot be easily controlled, or whose seizures need definition, will be admitted to a hospital for intensive neurodiagnostic monitoring. Nurses are present in each of these settings and the role of

the nurse is ever expanding.

Traditionally, the patient has told his problems to the nurse, who in turn would relay these to the physician. Now, in some settings the patient may be examined, instructed and guided by the nurse. This frees the physician, not from interaction with the patient, but to spend appropriate time dealing with diagnosis, definition of treatment plan, and making decisions concerning problems or answering questions posed by the patient and defined by the nurse. Further, it allows the nurse to use expertise gained in a given area with autonomy.

In the following pages, the authors, who deal with epilepsy on a daily basis, will outline this interaction with their patients. They will define a particular setting and discuss the nurse's role with the patient population that each sees.

In the office setting, the role of clinical nurse specialist has expanded beyond the traditional into one of active participant in the diagnosis and implementation of plan of care for the patient with epilepsy. In our office setting, an interdisciplinary approach is used. The team consists of a neurologist, a neuro-clinical nurse specialist, a medical technologist, an EEG technician and, of course, the person with epilepsy and significant others (family). A unique long-term relationship, sometimes life-long, is developed. We have the opportunity to set in motion a positive outlook on the therapy that is required.

In a newly diagnosed case involving a patient with epilepsy, the nurse's first role will be that of a specialist. A detailed history of the patient's presentation is obtained. The history should describe the chief complaint,

* From the Roper Hospital Epilepsy Unit and the Department of Neurology, Medical University of South Carolina, Charleston; Charleston Epilepsy Program.

**Address correspondence to Julianne Khoury, M.S.N., 125 Doughty Street, Suite 460, Charleston, SC 29403.

past medical history, review of systems, family history and social history. Following this, the nurse proceeds with the neurological examination. The nurse then confers with the neurologist. After the neurologist has further questioned and examined the patient, additional diagnostic testing is ordered, if needed. EEGs and blood testing are performed in our office setting. The neurologist then discusses the diagnosis and treatment plan with the patient/family. The nurse now assumes the role of teacher.

The role of teacher is crucial in assisting the patient/family in developing a healthy outlook on the new situation. Questions concerning what is epilepsy, what causes it and how it is treated need to be addressed. The neurologist usually addresses each of these areas; however, the information should be reviewed. The classifications of seizures are discussed. The discussion helps to clarify some misconceptions that many people have regarding epilepsy. Very basic anatomy and physiology need to be implemented at the patient/family's intellectual level in order for them to grasp what is happening and why. Modes of treatment then need to be further explained. Anti-epileptic medication is only one facet of the treatment plan. Issues such as lack of sleep/extreme fatigue, poor diet, emotional stress, should also be analyzed. During this first visit, it is important not to overwhelm the patient/family with information. A line needs to be drawn regarding how much information should be given. It is common in our practice to make follow-up phone calls two to three weeks post initial office visit to follow up on how they are adjusting. We do have teaching pamphlets and videos which we utilize. First aid information is always reviewed.

Before the visit concludes, the nurse assumes the role of patient advocate. To many people, the diagnosis of "epilepsy" is viewed as a stigma. It is essential for the nurse to reassure the patient/family that the diagnosis of "epilepsy" does not mean the cessation of a normal life. Today we know far more about treating persons with epilepsy

than ever before. New medicines are being researched. In our office, we are currently taking part in researching two new seizure medicines that are not yet available to the public. Further, epilepsy units are being established in hospitals to help diagnose difficult cases, and seizure surgery is becoming more common.

An environment which challenges the patient to lead a normal life is our goal. We encourage them to accept the diagnosis and then to move on. We encourage the patient to take control of his treatment. If able, the patient should take control or take part in carrying out his medicine regimen and in documenting his seizure frequency. We explain how to keep a seizure calendar and supply them. Our reason for taking this approach is not to over burden the patient so that all his time is spent dealing with the disorder but, instead, to help him gain control of the disorder and then to take control of his life. When the patient is an infant or small child, the significant others must be able to take control until the child is able to participate in his own care.

From the very first contact, the nurse and the rest of the team must gain the trust of the patient/family. This is achieved by the team showing them that we are genuinely concerned and willing to assist them in understanding and accepting the diagnosis of "epilepsy." If we want to enjoy a good therapeutic relationship with our patients, then they must know from the very beginning that they can trust each of us. The care that we give to them should be unique because no two patients are ever alike. Working in a physician's office affords the nurse the opportunity to practice as a specialist, to promote teaching and to be the patient advocate.

A university setting that handles referrals from physicians throughout a large geographic region presents different problems for the nurse. The Seizure Clinic at the Medical University of South Carolina accepts patients with complex management problems who are referred from other physicians. These patients

may have experienced a first seizure or have a seizure disorder of long duration with difficult to manage seizures. These patients may have insurance, Medicaid, Medicare or nothing at all.

Our goals are to provide the best medical management of the patient, so that the patient can live as productive and seizure free a life as possible. The fact that our patient population, more so than in the private sector, does not have insurance, jobs nor adequate transportation makes it difficult to maintain continuity of care. Patients tend to miss appointments, run out of medications and be more noncompliant due to socioeconomic problems.

The Program Nurse Specialist in a university seizure clinic interacts with patients in many ways. The initial contact with the patient assesses where the patient is in understanding of what has happened to him if a first seizure. It is also used to teach the patient/family first aid management for seizure and how to accurately record information on the seizure record. Once a firm diagnosis of "seizure disorder" has been made, the nurse becomes an educator. The nurse reviews with the patient/family the medication schedule and side effects, and sets up procedures to facilitate compliance with the medication schedule (e.g., calendars on refrigerators to record when medications taken, use of weekly medication box with dividers for each day, counting medications at end of day to see if all doses for day have been taken).

On follow-up visits the nurse reviews over-the-counter drugs that interfere with the action of the anticonvulsants the patient may be taking. Dietary habits as well as stressors in life and sleep patterns are discussed. At this time the patient is scheduled for a session with the nurse to view a series of videotapes on seizures. Depending upon the patient's ability to comprehend, pamphlets were sent home with the patient on the first visit. These are reviewed at follow-up visits. Many of the patients seen in seizure clinic have difficulty

comprehending written pamphlets. We have found that many patients can best comprehend the information on videotapes. Discriminate use of materials by the nurse educator is important. Videotapes are available for loan to families but it is better to view the films with the patient/family so as to allow for discussion and questions as needed. In addition, we inform the patient who requests research information that the Epilepsy Foundation of America has a library that will pull abstract articles on different topics for them. Patients and families are encouraged to become involved in their local Epilepsy Association support groups. Information on these support groups as well as additional printed matter can be obtained by calling the public information number 1-800-EFA-1000.

In addition, a large amount of the nurse's time is spent dealing with social problems that the patient is encountering. Ideally, a Social Worker would be available on each clinic day to help patients with issues such as financial constraints which make obtaining medication and finding transportation difficult. In our clinic this is not possible and the nurse has to handle these issues. Due to the social stigmas associated with seizures, most of the patients we see are having difficulty at work or have lost jobs due to seizures and cannot find further employment. Many are having financial problems which make paying for medication, medical care and transportation difficult. The nurse will follow up with Vocational Rehabilitation, Social Service Disability offices and Social Services. The nurse also responds to calls from patient, school nurses, case workers and various healthcare agents.

Many of these patients become depressed and even despondent. The nurse then becomes a counselor. Due to the trust that has developed over the time the patient has been followed, the nurse may counsel the patient and listen to what is going on in his life. Referrals are made to psychologists, psychiatrists and mental health clinics if indicated.

Ongoing education is essential with these

patients in order to promote compliance and understanding so as to meet the goal of greatest seizure control with the least amount of medication. Many myths and stigmas are handled by the nurse every visit with the patient and families. Due to the transportation problems, very seldom does the same family member return with the patient at each visit. Thus the nurse has to assess educational needs of the family at each visit. Many times those family members who have reached a higher level of education are less likely to share with others that a family member has a seizure disorder. The nurse will need to work with family members to see that all understand about seizures and first aid. It is important to dispel any myths that are present and to help the family adjust to the fact that the seizure activity occupies only a small part of an individual's life time-wise. The patient is seizure free for the rest of the time which is a positive point.

Another important aspect of the program nurse specialist's role in seizure clinic is to be a consultant to other nurses in managing seizure patients, doing educational programs for the medical community and the public, participating in health fairs, conducting programs in the schools and participating in the Epilepsy Association support groups. The program nurse specialist in a university setting also becomes involved in research protocols more so than in the private sector. Yet, all the different areas covered point out that the art of nursing is the discipline most suited to coordinate the medical team which cares for the person with epilepsy and his or her family.

Another patient population with whom nurses interact are those hospitalized while undergoing monitoring in the Epilepsy Unit at Roper Hospital. In five years over 300 patients have been monitored. Half of these are from areas of South Carolina outside of the immediate Charleston community.

They vary in age from infants to the elderly and represent both populations discussed earlier. Roper does the monitoring for the physi-

cians on its staff and also the monitoring for the Epilepsy Clinics at the Medical University of South Carolina.

The Epilepsy Nurse Clinician sets three goals for each person admitted for intensive neurodiagnostic monitoring. The first, always, is safety in seizure. To accomplish this, seizure precautions are maintained. Beds are kept in low position, side rails are up, temperatures are done axillary or with mechanical (not glass) thermometers, tub/shower bathing is prohibited, and the patients are accompanied when leaving the unit. The second goal is for accurate monitoring both with EEG, with observation, and with timely lab tests. If monitoring is correctly accomplished, the moment in time during which a patient seizes will be "captured" so that the admitting physician can view the videotape, read the concurrent EEG, and evaluate relevant lab data for each event. The third goal is to educate each patient and family in appropriate fashion so that they understand the monitoring, learn about the patient's medical problem, and know the medical terms which will be most useful in discussion with their physician.

Statistically, 60 percent of the patients admitted will have epilepsy; 40 percent will not. Often the reason for monitoring will determine the educational goals which are set for individual patients and families.

Patients known to have epilepsy admitted for seizure definition and medical management will receive education appropriate to their previous knowledge and ability to learn. Each patient and family is taught as much about epilepsy in general and their seizure problem specifically as they wish to learn if time allows. A pre-test is used to survey the patient/family knowledge level, appropriate brochures are given, and interactive sessions with patient and/or family follow to allow individualization of instruction. Topics covered will usually include first aid for seizure type, seizure precautions, correct medical terminology for discussing the patient's problem, driving, medications in both general and

specific terms, lab tests, and other items of interest to the patient. Social issues are dealt with if appropriate and are most important when the patient is a child. Prevention of social problems is more effective than correction of the same.

Another patient, known to have epilepsy, admitted emergently because seizures have become quite frequent may be too sick for instruction. In this instance, it is the family who must receive education and counseling.

A patient, admitted for pre-surgical testing or monitoring will often have been admitted previously, received extensive education and may only need a few questions answered. However, a few of these patients will have been admitted for depth electrode studies. These studies, done in certain cases to provide needed information prior to seizure surgery, involve large amounts of one-on-one nursing time. The nurse clinician will not only educate the patient/family about each procedure but, on the day of electrode placement, will actually accompany the patient to the operating room, to various x-ray departments and, finally, will assess his neurological status in the recovery room.

Next will follow one or two weeks of continual close attendance by nurses from the neuroscience nursing unit who participate in the observation and monitoring of this patient. Both technical matters and emotional factors must be closely monitored as invasive neurodiagnostic monitoring can be physically and psychologically exhausting not only for the patient and family but also for staff.

What of the patient who is known NOT to have epilepsy or the one whose diagnosis is in question? This patient will receive instruction on the mechanisms of the monitoring system and should understand what monitoring may and may not tell the physician. If the patient has interest, basic epilepsy education and brochures are given but in-depth education is only done when there is a definitive diagnosis. If the patient is discharged before a diagnosis is reached, the names of resource persons to whom they may turn if needed are

given.

In addition to the above, the Epilepsy Nurse Clinician is an educator for the nursing staff which cares for the patients being monitored and a resource person for the hospital and community. Often there are opportunities for acting as a professional volunteer in support of lay groups and/or community service projects.

Many nurses caring for the patient with epilepsy will set goals of patient safety, of compliance with medication instruction, and of family education. The authors, having seen the results of inadequate education and unnecessary dependency on family interactions, would propose an additional goal. That goal would be not to be able to tell which member of the family has seizures unless the seizures are actually happening. To meet this goal the nurse needs to gain the trust of patient and family while stressing the importance of intelligent and questioning compliance. The family needs to accept the role of giving such assistance as is needed in a caring, matter-of-fact way. The person with epilepsy should accept that help without embarrassment while affirming in word and deed that only a small part of his time-wise is spent in seizure and that he should take charge of the rest of his life. □

REFERENCES

1. Penry JK. Epilepsy, diagnosis management quality of life. Raven Press. 1986.
2. Hauser WA, Hesdorffer DC. Facts about epilepsy. Epilepsy Foundation of America. 1990.
3. Ozuna J. Intermittent loss of arousal. In: AANN'S neuroscience nursing phenomena & practice. ed. Mitchell, et al. Appleton & Lange, 1988, 99-113.
4. Santilli N, Sierzant T. Advances in the treatment of epilepsy. *J Neuroscience Nursing*. 1987, 19:145-146.
5. Bare MA. The nurse's role in caring for people with epilepsy. *Merritt Putnam Quarterly*. Feb. 1990. Vol. 7, No. 1.
6. Rubin, LA, Publisher. Feedback. KSF Group. New York. Spring 1989-Summer 1991.
7. Reisner H. Children with epilepsy. Woodbine House Publishers, Rockville, Md. 1988.
8. Roper Hospital Epilepsy Unit Records. Roper Hospital, 316 Calhoun St., Charleston, SC (803) 724-2530.

RESOURCES

Epilepsy Foundation of America, National Epilepsy Library, 4351 Garden City Drive, Landover, MD 20785. (800) EFA-4050. Multiple pamphlets, videotapes and films available.

Videotapes:

1. *Family Video Library*: (4 tapes, 12-15 min. each)
 - a. "Understanding Seizure Disorders"
 - b. "How Medicines Work"
 - c. "I Have Epilepsy Too"
 - d. "Epilepsy and the Family"
EFA 1989
2. "And Life Goes On, Severe Seizures of Early Childhood" (Lennox-Fastaut Syndrome and Infantile Spasms). EFA 1990.
3. "Just Like You and Me" (20 minutes) [accompany-monograph, teaching booklet, and information sheet]. State of the Art Incorporated, Helen Reisner, Producer, 1990. PBS Videos, 1320 Braddock Place, Alexandria, VA 22314. (Ordering 800-344-3337 or Information 800-424-7963).



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FITS AND STARTS: DIAGNOSTIC DILEMMAS IN EPILEPSY

HAROLD E. BOOKER, M. D.

Dr. Harold E. Booker is one of the most distinguished epileptologists in the United States of America. After his training in neurology and a tour of duty in the military, Dr. Booker joined the faculty in Neurology at the University of Wisconsin. In the late 1960s, he developed an analytical lab for determination of antiepileptic drug serum levels. He participated in early clinical trials of Clonazepam and other antiepileptic agents. From 1979 to 1986, he served as Director of Neurology in the V. A. central office. In 1983, he received a designation of International Ambassador for Epilepsy from Epilepsy International. In 1986, he served for six weeks in Indonesia as the first Epilepsy Foundation of America William Lennox International Visiting Professor. He served as Chief of Neurology at the V. A. Medical Center in Cincinnati, Ohio, where he organized a seizure clinic and a clinical neurophysiology laboratory with emphasis on intensive monitoring of patients with seizures. He recently moved to Charleston, South Carolina, and entered practice with Dr. Braxton Wannamaker.

He is a past president of the American Epilepsy Society, a member of the Board of Directors of the Epilepsy Foundation of America. He serves on the editorial boards of the journals Epilepsia and The Journal of Epilepsy.

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The landscape of epilepsy has changed significantly over the past two decades. Intensive monitoring — the use of simultaneous audio-visual and EEG recording — has allowed a more rigorous recognition of what is an epileptic seizure and what is not than ever before. In addition, it has defined the clinical and EEG features of the different types of epileptic seizures, resulting in the new International Classification of Seizures. The epileptology community is now turning its attention in the same way to rigorously defining the various epilepsy syndromes and specific epilepsy diseases. Determination of the concentration of antiepileptic drugs and their major metabolites in serum and other biologic fluids puts the pharmacologic management of epilepsy on a more rational basis than ever before. Noncompliance can be defined and usually detected, poor seizure control due to low serum levels can be recognized and cor-

rected, and many dose-dependent adverse drug effects can be defined and corrected. As a consequence of the above, we know far more about the clinical diagnosis and management of seizures, seizure disorders and epilepsy than ever before.

Unfortunately, these changes have not simplified the subject but rather have made it more complex. The primary care physician is the first line of defense in epilepsy, as in most other areas of medicine, and must deal with this complexity. The observation that between 15 to 25 percent of all patients referred to tertiary or comprehensive epilepsy centers turn out, on further study, not to have epilepsy at all emphasizes that errors in diagnosis are unacceptably too common. The single most prevalent error is the false-positive error; that is, labeling a patient as having epilepsy when, in fact, he does not. The most common mistake involves nonepileptic psychogenic pseu-

doseizures.

The reason for the high rate of incorrect diagnosis is that the physician is severely handicapped in the process by which diagnosis in epilepsy has to be made. By definition, epilepsy is diagnosed when the patient has recurrent, unprovoked seizures. By unprovoked we mean that they did not occur in the early stages of an acute encephalopathy, such as encephalitis or meningitis. Nor are seizures that are the result of systemic metabolic abnormalities such as hypoglycemia properly considered epilepsy. Thus, to establish a diagnosis of epilepsy, the physician must establish that the patient has recurrent, unprovoked seizures.

The usual process of establishing a diagnosis develops clues from the history, the findings on the physical exam, and the results of selected and appropriate laboratory studies and x-ray procedures. However, in cases of epilepsy *there is no finding, or set of findings, on the general physical and the neurological examinations that reliably discriminate between those patients who have seizures and those who do not.* To be sure, there are findings that are associated with an increased risk of seizures, such as the cutaneous stigmata of tuberous sclerosis, for example. And there are also findings that may give important clues as to the cause of the patient's seizures. Nor are there any lab tests or x-ray studies that reliably discriminate between those patients who have seizures and those who do not. The one possible exception would be the electroencephalogram. Yet the majority of patients with epilepsy have normal or only nonspecific abnormalities on routine EEG studies. Thus, the physician's only recourse is the history.

If we could get a detailed description from the history of the nature of the symptoms and the sequence of events in the patient's spells, then there would be little difficulty in establishing that the spells were epileptic seizures, and we could even specify what type of seizure. Yet, seizures seldom occur in the

doctor's office so that we must rely upon reports from the patient and from others who may have witnessed the spells. Because most seizures, with the exception of simple partial seizures, involve alteration or even total loss of consciousness, the patient himself is rarely able to give an accurate description of what happens during his or her spells. Reports from lay observers (and, unfortunately, many professionals) are often not much better and frequently do not allow the doctor to reliably discriminate between spells that are seizure, syncope, or psychogenic.

If there is uncertainty about the presence of epileptic seizures, it is better to err in the direction of a false-negative than a false-positive diagnosis of epilepsy. Epilepsy, and often even just the label of epilepsy, can result in profound losses in the patient's lifestyle. The privilege of driving must be suspended (at least until control is obtained). Along with this often goes the loss of employment. Lowered self-esteem and some degree of social ostracism is common. Antiepileptic drugs, while generally safe, on rare occasions can result in serious, potentially fatal adverse drug effects. Any or all of the above burdens are difficult for the patient with epilepsy to bear. They are particularly tragic if the patient indeed did not have epilepsy.

Although one might suspect that the risk of significant injury of recurrent seizures would be great, prospective studies agree that the risk is not particularly high. Nor can we guarantee that starting a patient on any particular antiepileptic drug at any particular dose will be adequate to prevent recurrent seizures if they were going to recur. Thus, we will most likely do more patients more good when we are not sure of the diagnosis by erring on the side of a false-negative diagnosis. If the patient indeed has epilepsy, that will usually become quite apparent as time goes on.

Harold E. Booker, M. D.
125 Doughty Street, Suite 460
Charleston, SC 29403

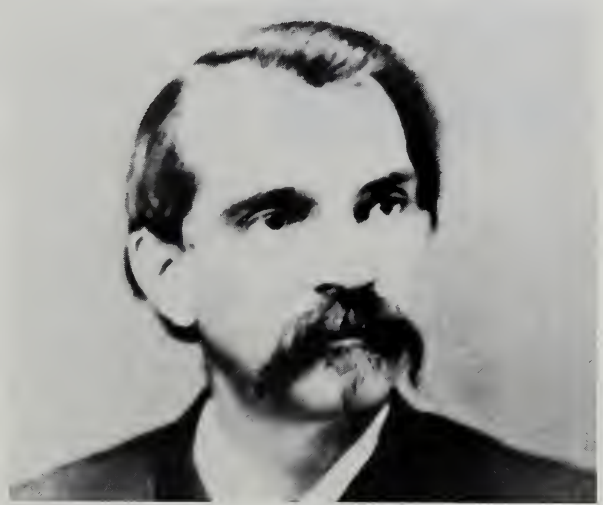
On the Cover:

A REPORT OF CEREBRAL SURGERY AND ITS CURATIVE EFFECT IN A CASE OF TRAUMATIC EPILEPSY BY W.H. NARDIN, M. D.

Dr. Waller Hunn Nardin (1837-1908) of Anderson (cover story, JSCMA, May 1986) reported to his colleagues at the 1896 Annual Meeting of the SCMA a case of a 56-year-old farmer, Mr. S., who consulted the doctor about his case of epilepsy. On examination, Dr. Nardin noticed a scar on his forehead and on questioning the patient learned that in 1881 Mr. S. had sustained a head injury that healed, untreated, and gave him no trouble. In 1892, he had his first attack of epilepsy which was followed by several others. Dr. Nardin decided that the seizures were caused by the old wound and sought permission to trephine. The patient was doubtful both of the diagnosis and the treatment and demurred until his case went from bad to worse, with attacks increasing both in force and frequency.

In January 1896, Dr. Nardin was called to visit Mr. S. with instructions to bring his instruments to operate. The patient was in such distress that Nardin feared that the time had passed for successful surgery, but after prescribing a tonic and bromides, he told the unfortunate sufferer to come to Anderson prepared to stay one or perhaps two weeks.

On March 19, Dr. Nardin performed the surgery, first removing with the trephine a "button" of bone. Dr. Nardin explains: "You will find (on the button) one edge very much thicker than the other, the thinnest place being in the center of the external depression, the center surface of the bone roughened, to which the scalp was adherent; on the thickened edge the internal surface shows a groove with roughened edges, to which I found the dura adherent, and which gave me some trouble in removing the button of bone after it



Walter H. Nardin, M. D.

had been cut through, and the groove is evidence, to my mind, of a fracture of the internal table of the skull at the time of his injury and convinced me of the correctness of my diagnosis, as I had said to the patient that an injury had been done to the internal table of the skull and adhesion formed, whose continued irritation had given rise to his application of sponges...it was decided not to re-apply the removed bone." The wound was closed. The patient recovered, and at the time of the presentation of the paper, had had no further problems. A pre-op promise to his neighbors, ("I am going to get Dr. Nardin to bore into my head and then I am going to preaching and turn my farm over to my wife, who is fully competent to manage it.") was fulfilled by Mr. S.

Pictured on the cover are 19th century instruments for opening the skull.

— Betty Newsom
The Waring Historical Library



Auxiliary Page

SEVENTY YEARS - BUILDING A TRADITION

Thank you for bestowing upon me the privilege of serving you as president of the South Carolina Medical Association Auxiliary. It is with deepest humility and total commitment that I will uphold the goals of this organization and build on our past accomplishments to strengthen the present organization in order to secure and insure its future.

In honoring me, the auxiliary has also honored my family and my county auxiliary, Charleston. It is because of my husband's commitment to his profession of medicine, and my father's compassionate dedication to medicine that my entire life has revolved around the profession and its issues. It is because of my mother's enthusiasm, love, and dedication to this organization that I understand why volunteer work in auxiliary is so important. Because of my mother's experience, I have seen first-hand her 1968-69 state presidential theme, "Auxiliary in Action."

I remember as a child how thrilled I was that my mother was involved with the auxiliary at the state convention because I got to enjoy the pleasures of Myrtle Beach. And when my husband became a medical student, I enjoyed the fellowship and friendships that were made in WASAMA (Women's Auxiliary to the Student American Medical Association). And I had the privilege of serving as president of the Interns and Residents Auxiliary to the Medical University of South Carolina. There are seven of us from these two organizations who will be serving on the state board or on committees next year.

Just as my past auxiliary experiences have left an impression on me, so too does the wisdom of our auxiliary founders inspire us today. This coming year our state auxiliary will celebrate its seventieth anniversary. And as our anniversary theme, I have selected:

*Building on the Past
Strengthening the Present
Securing the Future*

The South Carolina Medical Association Auxiliary was formed in April 1923 at the annual convention of the South Carolina Medical Association in Charleston. A meeting was held with 28 women present, and the first president elected was Mrs. R. S. Cathcart of Charleston.

Our founders created this auxiliary to extend the aims of the medical profession. They built the system around the issues of the day, rather than molding the issues to fit the system. Today we are building effective partnerships with our physician spouses and adding our minds, voices, and hands to creating solutions to problems as they arise. Today, with our goals and values clearly before us, we address systematic change. By combining our past insight with our current knowledge, we are able to impact the future of our communities.

Only by working together as a federation of national, state, and county auxiliaries with strong goals and objectives are we able to build upon the initiatives of the past decades. In order to continue to promote the good health of our communities, we must support safety and screening programs, health education, and programs that affect children and the elderly. Domestic violence has been called the disease of the '90s and touches as many as one-fourth of all American families. The American Medical Association Auxiliary has requested that we educate the public, support

victims, and provide physicians with resources for their patients.

In 1931 our state auxiliary established a student loan fund for medical students, nurses, laboratory and x-ray technologists. Today, our state and county auxiliaries provide medical scholarships. Financial support for medical education continues with our fundraising efforts for the American Medical Association Education and Research Foundation (AMA-ERF).

In legislation, it is essential that we increase our involvement with the South Carolina Medical Association and SOCPAC. The career of our physicians depends heavily on decisions made by elected officials in government. We must stay informed of the issues that affect the practice of medicine. And we must keep our legislators informed.

Membership is the pulse of our organization. Only by working together have we accomplished projects for our communities. Only as a strong, unified voice for medicine have we effected change. And only by participation in auxiliary can we become an effective support system for each other and for our physicians.

Matthew 17:20 states, "...if you have faith as small as a mustard seed, you can say to this mountain, 'move from here to there' and it will move. Nothing will be impossible for you,"

Are we dabbling around the challenging issues, or are we boldly seeking solutions? Are we striving to do things right or to do the right things? May the tradition of our founders inspire us to strengthen the dreams of our medical auxiliary. As we celebrate our seventieth anniversary, let us together envision the bold possibilities.

Hope Gazes Grayson
President



The Gift of Life

The children at St. Jude Children's Research Hospital take life one day at a time. At St. Jude, every second counts. The children here are fighting for their lives.

The doctors and researchers at St. Jude are working to defeat the deadly enemy: childhood cancer. Since St. Jude Hospital opened in 1962, it has forged new treat-

ments for childhood cancer and has helped save the lives of thousands of children around the world. But the battle has just begun.

You can join the fight. To find out how you can help, write to St. Jude, P.O. Box 3704, Memphis, Tennessee 38103, or call 1-800-877-5833.



**ST. JUDE CHILDREN'S
RESEARCH HOSPITAL**
Danny Thomas Founder



President's Page

PHYSICIANS AT THE TABLE

At the April, 1992 meeting of the Executive Committee of Charleston County Medical Society, a vote was taken to establish a tri-countywide committee (Charleston, Berkley and Dorchester). Active, treating physicians in this area would invite the various hospital administrators plus the chiefs of the medical staffs to sit at a table to discuss what is the best and most cost efficient way to provide for our patients.

The delivery of health care is a regional problem and physicians need to regain control. WE — not insurance companies, various levels of government or attorneys—are the best advocates for our patients. I would encourage the other metropolitan county medical societies in our state to consider setting up such a committee in their respective areas.

Sure, there are no "teeth" in such an approach; but in the decade of the '90s, cooperation and collaboration is a must if we are to continue to provide the best medical care in the world at an affordable cost.

Bartolo M. Barone, M. D.
President

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Charles S. Bryan, M.D.
SCMA, P.O. Box 11188
Columbia, S.C. 29211

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HYPONATREMIA: MANIFESTATIONS AND TREATMENT*

ARTHUR V. WILLIAMS, M. D.**

Following the introduction of the flame photometer into clinical laboratories, the simplified measurement of electrolytes in blood and urine generated intense interest in fluid, electrolyte and acid-base homeostasis. A Low Salt Syndrome was described. Five to six percent saline was recommended therapy. "The more concentrated the saline solution the more readily will the deficiency be made up".¹ It was learned through difficult clinical experience that serum sodium concentration depended upon its dilution and that hyponatremia might occur in the face of sodium retention, depletion or no gross change in balance. It also became clear that a low serum sodium was of great clinical importance and was accompanied by a 60 fold increase in hospital mortality, this usually due to primary disease.² Because of its clinical significance and frequency, the pathophysiology of hyponatremic states and principles of therapy are reviewed.

THE SYNDROME OF INAPPROPRIATE ANTIDIURETIC SECRETION (SIADH)

Originally reported in bronchogenic carcinoma,

it is now evident that the syndrome may be seen in a variety of malignancies, in pulmonary disorders as diverse as asthma and bacterial pneumonia and disorders of the central nervous system ranging from psychosis to intracerebral hemorrhage. In addition, a long list of drugs ranging from chlorpropamide to vincristine including the NSAIDS have been identified as stimulating vasopressin release. The role of antidiuretic hormone in the pathophysiology of a clinical syndrome was recognized by Schwartz and his associates in Boston jointly with Bartter in Bethesda.³ Control of volume by the appropriate response of ADH to changes in osmolality had been described by Verney.⁴ Urinary salt loss induced by volume expansion with pitressin had also been recognized.⁵ Hyponatremia with cerebral disease had been described as "Cerebral Salt Wasting" but its relationship to ADH was not recognized. With this background the recognition of the inappropriate secretion of ADH became a landmark in the understanding of hyponatremia.

Bartter and Schwartz reviewed the syndrome ten years later outlining its clinical features and pathophysiology.⁶ Hyponatremia was attributed to both dilution with volume expansion and increased sodium excretion related to the expand-

*From the Department of Medicine, Medical University of South Carolina, Charleston.

**Address correspondence to Dr. Williams at the Department of Medicine, Medical University of South Carolina, 171 Ashley Avenue, Charleston, SC 29425-2227.

ed volume. The magnitude of the decrease in concentration, however, could not be explained by dilution and sodium loss alone (Although intracellular shift of sodium into muscle has been postulated the explanation of the greater than predicted fall in sodium is unexplained.). Restoration of osmolality requires less sodium than might be predicted so that the missing ion seems to reappear during correction.

A striking feature was failure to correct osmolality by administration of as much as 800 mEq Na per day. Inability to conserve salt was unrelated to adrenal insufficiency or increase in the filtered load but was modified by decreased ECF volume. Most patients developed a "steady state" of hyponatremia, sodium excretion reflecting intake. Characteristically no edema was seen. As in heart failure or the nephrotic syndrome, ECF gain of three to four liters is not likely to produce detectable edema. Urine osmolality was usually hypertonic to plasma, however the cardinal requisite for the diagnosis of SIADH is only that the urine be more concentrated than appropriate for a given solute and water intake. The cause of salt loss with volume expansion is still uncertain but volume expansion increases atrial natriuretic factor (ANF) and urine salt excretion, the increment in excretion significantly related to rise in plasma ANF. It is, therefore, likely that ANF is at least in part responsible for the natriuresis.⁷ When antidiuretic hormone assay became available the syndrome was subdivided into four types depending upon hormone level response during hypertonic saline or water loading. In 37 percent of patients studied, there were wide fluctuations of ADH levels independent of osmotic control. In 33 percent, release of vasopressin correlated with plasma osmolality but release of ADH began at a lower level than the usual 280 mOsm. Normally there is a linear increase in hormone levels above 280 and suppression below to levels below 1 pg/ml that could allow a diuresis of as much as 20 liters a day. In 16 percent of patients, there was a constant non-suppressible level. In the remainder was no detectable abnormality in vasopressin secretion. None of the four types was found to be associated with any specific underlying illness.⁸

In summary, in SIADH, glomerular filtration and adrenal function are normal. The primary pathophysiologic abnormality is ADH induced increased water permeability of collecting duct cells allowing exposure of intratubular water to the high peri-tubular osmolality. The result is recovery of intratubular free water into extracellular space with ECF expansion with concomitant natriuresis and hyponatremia due to both dilution and sodium loss.

The majority of patients with SIADH are asymptomatic. If serum sodium falls below 125 mEq/L, cerebral signs and symptoms may appear ranging from depression to grand mal seizures. Central nervous system malfunction has been reported in previously healthy women who had a normal clinical course immediately after elective surgery. Approximately two days after surgery grand mal seizures developed in the face of hyponatremia (average Na 108 mEq/L). Twenty-three percent of the patients died, 11 had paralysis and 60 percent remained in a vegetative state. Although a variety of diagnoses were entertained at the time of convulsions, these patients were promptly and appropriately treated. In this group, death was secondary to herniation of the brain stem through the foramen magnum in three patients. In the others, there was no evidence of cerebral edema and no brain lesions that might have been related to hyponatremia. There was no demyelination that at times is associated with hyponatremia or its correction.⁹ As a rule, however, the high mortality associated with hyponatremia is related to the underlying disease.

Since hyponatremia and urinary salt loss continue in the presence of volume expansion the sine qua non of therapy is fluid restriction, this augmented by a loop diuretic. The use of hypertonic saline alone is followed by only a transient rise in serum sodium. If it is administered in the presence of a fixed but more dilute concentration of urine, it will be excreted diluted to urine osmolality. This water loss is responsible for rise in sodium. The administered salt is excreted since sodium balance is a characteristic of established SIADH.¹⁰ The question of the significance of the rate of correction of serum sodium concentration has been debated because of the appearance of

demyelinating lesions in the brain, particularly the pons, after rapid correction to normal and it has been suggested that the rate not be more than 12 mMols/day.¹¹

Symptomatic hyponatremia may be corrected more rapidly to sodium levels between 121 mMols and 134 mMols but never more than 25 mMols/day. With these precautions demyelination is not seen.¹²

Since the decrease in serum sodium is disproportionate to dilution and to sodium loss, an accurate estimate of total sodium replacement cannot be obtained by multiplying the apparent deficit by the number of liters estimated as total body water (TBW). However, estimation of the volume of hypertonic saline to be safely administered may be done by multiplying the desired increase in millimols by TBW. For example, assume that the desired increase is projected to be 10 mEq and TBW equals 50 percent of body weight in a 100 kg patient. Then $10 \times 50 = 500$ mEq of salt to be administered. Since a liter of three percent saline contains 513 mEq/L of sodium its administration should achieve the desired change. Five hundred mls should be given during a 12-hour period. Re-estimation of dose should then be done following a repeat serum sodium and clinical evaluation.

The concomitant use of a loop diuretic blocks sodium transport from the thick limb to the interstitium decreasing the driving force for reabsorption from the collecting duct thereby increasing free water excretion. This water loss is responsible for the increase in serum sodium. If in a patient with 50 L of TBW, plasma osmolality is 250, then total body mOsm are 12500. If a diuretic is responsible for 2 L loss, then TBW is 48 and $\text{mOsm/L} = 12500/48 = 260$, an increase of 10 with a sodium increment predictably responsible for much of this change.¹³ Neither the administration of saline nor the use of diuretics is effective without water restriction.

The use of normal saline is ineffective in increasing serum sodium. Assuming the osmolality of normal saline to be 300 and that of urine fixed at 600, then the saline will be excreted doubled in concentration and halved in volume. The retained fraction of administered water will fur-

ther dilute serum sodium.

With chronic SIADH, water restriction and administration of hypertonic saline and a diuretic may not control hypotonicity. Both lithium and demeclocycline have been used to increase free water excretion by creating a controllable nephrogenic diabetes insipidus. Demeclocycline given in a dose of 13 to 15 mg/Kg/day is more predictable than lithium and more quickly reversible. Its mode of action is interference with collecting tubular cyclic AMP. Unlike lithium it does not potentiate the CNS manifestations of hyponatremia.¹⁴

CONGESTIVE HEART FAILURE

The term "effective blood volume" is an attempt to describe the volume of blood within the arterial tree. It is controlled by peripheral vascular resistance and cardiac output, a decrease in either sensed by receptors within the tree. Diminished perfusion of these receptors activates three major constrictor systems, arginine vasopressin, the sympathetic nervous system and the renin-angiotensin-aldosterone axis.¹⁵ Not usually considered a vasoconstrictor, this action of arginine vasopressin is demonstrated by the lowering of blood pressure related to decrease in peripheral resistance following the use of an ADH antagonist.¹⁶

Hyponatremia follows ADH release in spite of the positive salt balance seen in heart failure. It is of interest that the blood level of angiotensin II in this entity is inversely related to sodium concentration but not to other indicators of severity of failure such as cardiac index, pulmonary artery or right atrial pressure or systemic or pulmonary vascular resistance. There is also no relationship to the usual measurements of renal function.¹⁷ Enhanced efferent arteriolar tone due to angiotensin II increases glomerular capillary hydraulic pressure (since these vessels are pre-arteriolar) thereby increasing filtration fraction. With an increased fraction of water filtered in the glomerulus, protein is concentrated increasing oncotic pressure in the post-arteriolar peritubular capillaries. Hydraulic pressure is decreased. These physical changes promote movement of sodium and water from lateral intercellular

spaces into peritubular capillaries. Salt and water retention are virtually identical to those seen with infusion of angiotensin II. Moreover, angiotensin blockade in models of and patients with congestive heart failure results in improvement of renal blood flow and sodium, excretion presumably through reversal of efferent arteriolar resistance. The same mechanism may also influence salt recovery in more distal tubular segments, particularly in the ascending limb of Henle.¹⁸ Atrial natriuretic factor may be protective in the hyponatremia of heart failure by suppressing vasopressin release,¹⁹ and by blocking its effect in the medullary collecting tubule.²⁰ The hyponatremia of heart failure responds to the treatment of the failure and should not be treated as a separate entity. Unlike therapy in SIADH the use of hypertonic saline may be disastrous. The use of a converting enzyme inhibitor is helpful in returning glomerular and peritubular hydrostatic and oncotic pressures to normal and in decreasing afterload. Enalapril is effective either used alone or with vasodilators.²¹

The current treatment of congestive heart failure including the use of vasodilators and converting enzyme inhibitors has been well reviewed.²²

HEPATIC ASCITES

Hyponatremia commonly accompanies hepatic ascites. Arguments regarding the mechanisms of "underfilling" and "overflow" proponents continue. Overflow is said to begin with renal salt and water retention but does not answer the question of why the kidney decides to retain salt and water if the liver is sick.²³ Evidence for baroreceptor response to decreased "Effective Blood Volume" has been the finding of increased plasma norepinephrine in patients with ascites, this thought to be a good index of baroreceptor activity. Positive correlations were seen between plasma elevations of norepinephrine and those of renin and aldosterone, perhaps stimulated by sympathetic discharge and statistically related to the presence of ascites in liver disease. Elevated arginine vasopressin had previously been demonstrated with ascites and related to baroreceptor sensitivity to a volume change caused by

peripheral vasodilation, diminished plasma oncotic pressure and splanchnic venous pooling. A critical correlate of the elevated plasma levels found was decreased urinary sodium excretion.²⁴

Further evidence for the role of volume contraction in salt and water retention in liver disease is improvement of both with head out immersion which increases central blood volume.²⁵

Maneuvers to increase plasma oncotic pressure may be of help in the treatment of hepatic cirrhosis. Diuretics must be employed cautiously because of the possibility of further effective blood volume contraction and the precipitation of renal failure. Spironolactone is the initial diuretic used because of its potassium sparing effect.

DIURETICS

The use of diuretics is accompanied by severe volume contraction in only five percent of hospitalized patients receiving potent diuretics.²⁶ The response to intermittent diuretic therapy is opposed by homeostatic forces that limit the extent of salt and water loss. Prolonged negative sodium balance may be maintained only with severe dietary salt restriction.²⁷ Hyponatremia with diuretic use is disproportionate to sodium loss and related to diuretic induced inability of the kidney to dilute urine or ADH induced free water retention triggered by receptors sensitive to small volume decreases.

Furosemide blocks a three ion Na-K-2 Cl transport system from the lumen of the thick limb of Henle where dilution of tubular fluid to approximately 150 mMols normally occurs. Thiazide diuretics block a more distal 2 ion Na-Cl transporter that completes dilution. Thiazides have no effect on the three ion system and furosemide a smaller effect on the two ion sites.²⁹ Both diuretics interfere with dilution of urine and consequent inability to generate and excrete free water.

Measurements of total body sodium, water, and potassium in diuretic induced hyponatremia have demonstrated the first two normal but potassium depleted, hyponatremia being secondary to an intracellular shift of sodium as potassium is

lost.³⁰

Discontinuation of diuretic therapy may be diagnostic as well as therapeutic. If discontinuation is not possible a change in the type of diuretic may be helpful. Adequate potassium replacement is essential. Low serum sodium levels seen with diuretic therapy are characteristic of many clinical entities for which the drugs are administered. Correction is made only after consideration of possible effects of administration of salt or water deprivation on the primary disease.

URINARY SODIUM LOSS

Although severe sodium depletion secondary to renal salt wasting is unusual, many patients with restricted glomerular filtration rates have difficulty in sodium conservation that usually does not present a problem of sodium wasting if a reasonable salt intake is maintained. Sodium loss with mineralocorticoid deficiency is well known. The mechanism of the related hyponatremia is not entirely clear but it is accompanied by an elevated antidiuretic hormone level suppressible by the administration of glucocorticoid.³¹ Salt loss may be related to urinary excretion of substances of relatively small molecular weight, freely filtered and poorly absorbed. Glucose, bicarbonate and, to some extent, urea produce osmotic diuresis, a phenomenon best studied with mannitol infusion. In the presence of mannitol proximal water reabsorption is decreased because of consequent increased intratubular osmolality. Active reabsorption of sodium continues until intratubular sodium concentration falls to 100 or below. With decreased concentration, reabsorption equals back-leak and, though decreased in concentration, an increased sodium load is delivered into the descending limb of Henle. Normally sodium is passively transported from the thin ascending limb of Henle into the interstitium down a concentration gradient now blunted by osmotic dilution. The increased intratubular sodium load is transported down stream. Sodium removal continues in the thick ascending limb but decreased resorption has been noted in more distal tubular segments. Contributing to decreased water recovery usually observed in the

thin descending limb as well as in collecting tubules is low interstitial osmolality secondary to increased intrarenal blood flow with medullary washout.³²

Hyperglycemia may increase urine volume from 500 to 1500 ml/day and sodium excretion by 50 to 100 mEq. Hyponatremia in this instance is initially due to dilution with osmotic transfer of intracellular to extracellular water because of extracellular osmolality contributed by glucose. But with eventual volume contraction and electrolyte loss the composition and volume of body fluids is the result of the interaction of many factors intra and extra-renal tending to conserve salt. With severe volume contraction salt excretion is limited even with continued high urine volume.

SUMMARY

All hyponatremic states have in common elevation of vasopressin. Without this the loss of salt would be followed by appropriate diuresis and normonatremia.

If hyponatremia is triggered by a volume change as in heart failure or portal cirrhosis not only is ADH released but the mechanisms that control salt retention create an essentially sodium free urine, always less than 20 mEq/L.

If the initial event is inappropriate ADH secretion whether it be cerebral disease, neoplasm, a pulmonary lesion or a growing list of drugs; there is no related signal for salt retention and urine sodium and tonicity are high, the latter usually higher than that of plasma.

If salt loss is due to intrinsic renal disease, diuretics, osmotic or otherwise, or adrenal failure urinary sodium is variable depending upon the magnitude of the response to volume of salt retaining factors.

Because hyponatremia is often present with major illness and because more than one factor may be involved in its genesis, the establishment of its origin and appropriate treatment remain a diagnostic and therapeutic challenge. □

REFERENCES

1. Schroeder HA: Renal failure associated with low extracellular sodium chloride, the low salt syndrome. *JAMA* 1949; V 117: 24.
2. Anderson RJ, Chung HM, Kluge R, Schrier R: Hypona-

- tremia: a prospective analysis of its epidemiology and the pathogenetic role of vasopressin. *An Int Med* 1985;102:164-8.
3. Schwartz WB, Bennett W, Curelop S, Bartter FB: A syndrome of renal sodium loss and hyponatremia probably resulting from nappropriate secretion of antidiuretic hormone. *Am J Med* 1957; 23: 529.
4. Verney EB: Antidiuretic hormone and factors which determine its release. Croonian Lecture, *Proc Roy Soc London* 1947; 135: 25.
5. Leaf A, Bartter FC, Santos RF, Wrong O: Evidence in man that urinary electrolyte loss induced by pitressin is a function of water retention. *J Clin Invest* 1953; 32: 868.
6. Bartter FC, Schwartz WB: The syndrome of inappropriate secretion of antidiuretic hormone. *Am J Med* 1967; 42: 790
7. Cogan E, Debieve MF, Pepersack T, Abramow M: Natriuresis and atrial natriuretic factor secretion during inappropriate antidiuresis. *Am J Med* 1988; 84: 409.
8. Zerbe R, Stropes L, Robertson G: Vasopressin function in the syndrome of inappropriate antidiuresis. *Ann Rev Med* 1980; 31:31 5.
9. Arieff AI: Hyponatremia, convulsions, respiratory arrest and permanent brain damage after elective surgery in healthy women. *N Eng J Med* 1986; 314: 1529.
10. Rose BD: New approaches to disturbances in the plasma sodium concentration. *Am J Med* 1986; 81:1033.
11. Sterns RH, Riggs JE, Schochet SS Jr: Osmotic demyelination syndrome following correction of hyponatremia. *N Eng J Med* 1986; 314: 1535.
12. Ayus CJ, Krothapalli, RK and Arieff AI: The treatment of symptomatic hyponatremia and its relation to brain damage. *N Eng J Med* 1987; 317: 1190.
13. Edelman IS, Leibman J, Omeara MP, Birkenfield LW: Interrelations between serum sodium concentration, serum osmolality and total exchangeable sodium, total exchangeable potassium and total body water. *J Clin Invest* 1958; 37: 1236.
14. Forrest JH, Hong C, Morrison G, Bia M, Singer I: Superiority of demeclocycline over lithium in the treatment of inappropriate secretion of antidiuretic hormone. *N Eng J Med* 1978; 298: 173.
15. Schrier RW: The pathogenesis of sodium and water retention in high-output and low-output cardiac failure, nephrotic syndrome, cirrhosis and pregnancy. *N Eng J Med* 1988; 319:1 065.
16. Yared A, Kon V, Brenner BM, Ichikawa I: Role for vasopressin (ADH) in rats with congestive heart failure. *Kidney Int* 1985; 27:337.
17. Cohn JN, Levine TB: Angiotensin-converting enzyme inhibition in congestive heart failure: The concept. *Am J Card* 1982;49: 1 480.
18. Skorecki KL, Brenner BM: Body fluid homeostasis in congestive heart failure and cirrhosis with ascites. *Am J Med* 1982; 72:323.
19. Clark BA, Elahi D, Fish L, McAloon-Dyke M, Davis K, et al: Atrial natriuretic peptide suppresses osmostimulated vasopressin release in young and elderly humans. *Am J Physiol* 1991; 26 1; E252-6 .
20. Nonoguchi H, Sands JM, Knepper MA: Atrial natriuretic factor inhibits vasopressin-stimulated osmotic water permeability in rat inner medullary collecting duct. *J Clin Invest* 1988; 82: 1 383-90.
21. Conn JN, et al: A comparison of enalapril with hydralazine-isorbide dinitrate in the treatment of chronic congestive heart failure. *N Eng J Med* 1991; 325: 303.
22. Smith TW, Kelly RA: Therapeutic strategies for CHF in the 1990's. *Hosp Prac* 1991; 26:127.
23. Epstein FH: Underfilling versus overflow in hepatic ascites. *N Eng J Med* 1982; 307: 1577.
24. Bichet DG, Van Putten VJ, Schrier RW: Potential role of increased sympathetic activity in impaired sodium and water excretion in cirrhosis. *N Eng J Med* 1982; 307: 1552-7.
25. Ref. 23.
26. Hutchison T, Roy D, Seely JF: Diuretics, physiology, pharmacology and clinical use. W. B. Saunders Co 1986; 287-95.
27. Wilcox CS, Mitch WE, Kelly RA, et al: Response of the kidney to furosemide, I - Effects of salt intake and renal compensation. *J Lab Clin Med* 1983; 102:450.
28. Ref. 26.
29. Velazquez H, Wright FS: Effects of diuretic drugs on sodium -chloride transport by rat renal distal tubule. *Am J Phys* 1986; 250: 10 13.
30. Fichman MP, Vorherr H, Kleeman CR, Telfer N: Diuretic induced hyponatremia. *Ann Int Med* 1971; 75: 853-63.
31. Boykin J, DeTorrente A, Erickson A, Robertson G, Schrier RW: Role of plasma vasopressin in impaired water excretion of glucocorticoid deficiency. *J Clin Invest* 1978; 62: 738-44.
32. Gennari JF, Kassirer KP: Osmotic diuresis. *N Eng J Med* 1974; 291: 71 4-20.

POSTCESAREAN ENDOMETRITIS: A BRIEF REVIEW AND COMPARISON OF THREE ANTIBIOTIC REGIMENS*

LILLY FILLER, M. D.
CHARLES F. SHIPLEY, III, M. D.
EDWARD J. DENNIS, III, M. D.**
GEORGE H. NELSON, PH.D, M. D.***

Despite all major advances in obstetrics, postpartum endometritis is still a dreaded complication encountered in one to five percent of vaginal births and eight to 55 percent of cesarean deliveries.¹⁻³

It is generally agreed that there are some factors that are closely associated with postpartum endometritis, although it is difficult to say that these are causes of endometritis (Table I).³⁻⁶

There are numerous studies which have attempted to identify the responsible pathogens for postpartum endometritis and it is generally a mixed or polymicrobial problem. Table II lists the many organisms isolated from patients with clinical endometritis.^{3,5,7-11}

Treatment of postpartum endometritis varies, with primary coverage of anaerobic and aerobic organisms required. Often a triple antibiotic regimen including ampicillin, gentamicin and clindamycin is used, but single agent cephalosporins have also been used in the past.^{12,13} Most often treatment is begun without obtaining endometrial cultures and effectiveness is determined by clinical response rather than bacteriologic cure.

With the diagnosis of postpartum endometritis, a very joyful and happy time is now shadowed by clinical symptoms of fever, extreme abdominal and uterine tenderness, overall physical malaise, often necessitating abstinence from

TABLE I
FACTORS ASSOCIATED WITH
ENDOMETRITIS

- Maternal Age Less than 25 Years
- Low Socioeconomic Status
- Premature Labor
- Premature ROM
- Prolonged ROM
- Frequent Vaginal Exams
- Amniotic Fluid Infections
- Bacterial Vaginosis
- Cesarean Section
- Duration of Internal Fetal Monitoring

infant contact.

PROCEDURES AND METHODS

The Obstetrics and Gynecology Department at the University of South Carolina School of Medicine in conjunction with Upjohn Pharmaceutical Corporation undertook a small double-blind study to evaluate the effectiveness of the treatment of postcesarean endometritis with a new parenteral antibiotic, "trospectomycin."

This study was approved by the Institutional Review Boards of the Richland Memorial Hospital and the University of South Carolina. All patients were counseled and informed written consent was obtained.

Twenty-one patients with postcesarean endometritis were enrolled. Exclusion criteria included: maternal age <16 years; breast feeding; allergy to trospectomycin, spectinomycin, clin-

*From the Department of Obstetrics and Gynecology, University of South Carolina School of Medicine, Columbia.
**Deceased.
***Address correspondence to Dr. Nelson at the Department of Obstetrics and Gynecology, 2 Richland Medical Park, Suite 103, Columbia, SC 29203.

TABLE II
MICROORGANISMS ASSOCIATED WITH ENDOMETRITIS

ANEROBES:	AEROBES:
PEPTOCOCCUS SPECIES	STREPTOCOCCUS SPECIES
PEPTOSTEPTOCOCCUS SPECIES	STAPHYLOCOCCUS SPECIES
BACTEROIDES SPECIES	ESCHERICHIA COLI
CLOSTRIDIUM SPECIES	NEISSERIA GONORRHEAE
FUSOBACTERIUM SPECIES	ENTEROBACTER SPECIES
PROPIONIBACTERIUM SPECIES	GARDNERELLA VAGINALIS
	ACINETOBACTER SPECIES
OBLIGATE INTRACELLULAR ORGANISMS:	CITROBACTER SPECIES
CHLAMYDIA TRACHOMATIS	KLEBSIELLA PNEUMONIA
MYCOPLASMA HOMINIS	PROTEUS MIRABILIS
UREAPLASMA UREALYTICUM	PSEUDOMONAS AERUGINOSA
	BACILLUS SPECIES
	DIPHOTHEROIDS
	LACTOBACILLUS SPECIES

damycin, or aztreonam; concomitant antibiotic therapy (one prophylactic dose of antibiotic prior to cesarean was allowed); evidence of liver or renal disease, immunologic deficiency, or malignancy; or history of antibiotic-associated colitis.

Endometritis was diagnosed clinically with elevated temperatures and white count and a pelvic exam revealing abnormal uterine tenderness. Following enrollment, pretreatment cultures of the cervix were taken for *Neisseria gonorrhoeae* and *Chlamydia* and endometrial cultures were taken via pipelle for aerobes, anaerobes and *Chlamydia*. *Chlamydia* cultures were tested using the immunoassay method.

All antibiotic solutions were prepared in the hospital pharmacy and were dispensed to the floor in a double blind fashion. The randomized code was prepared by the Upjohn Company and was carried out by the pharmacy. Trospectomycin patients received 500 mg. trospectomycin, immediately followed by 1 gm. aztreonam (regimen A in Table III). Clindamycin patients received 900 mg. clindamycin, immediately followed by 1 gm. aztreonam (regimen B in Table III). In general, trospectomycin or clindamycin covers the gram positive aerobes and anaerobes and aztreonam is added for coverage of the gram negative aerobes.

Patient progress was monitored closely until complete abatement of fever, uterine tenderness, and white blood count occurred. When this occurred, the patient was discharged as a "clinical cure."

All patients were asked to return one to three days following discharge for post-treatment cultures and were given follow-up appointments for 21-28 days. *Chlamydia*-positive patients were to be retested for *chlamydia* at 21-28 days post discharge as well. The patients were not given oral antibiotics at discharge.

RESULTS

Twenty patients completed treatment and were discharged as clinical cures. One clindamycin patient (#7) improved clinically; however, she left against medical advice to be treated with oral antibiotics and was withdrawn from the study.

After all data were collected, the code was broken and revealed 12 patients received trospectomycin and eight received clindamycin. A summary of the trospectomycin patients is shown in Table IV and the clindamycin patients are presented in Table V.

DISCUSSION

Trospectomycin is similar in structure to its par-

TABLE III
THREE ANTIBIOTIC REGIMENS FOR TREATMENT OF
POSTCESAREAN ENDOMETRITIS

- A. Trospectomycin, 500 mg. immediately followed by Aztreonam, 1 gm q 8 h
- B. Clindamycin, 900 mg. immediately followed by Aztreonam, 1 gm q 8 h
- C. Triple antibiotic regimen:
 - Ampicillin, 2 gm q 6 hr
 - Gentamicin, 90-120 mg IV bolus followed by 60-80 mg. q 8 h
 - Clindamycin, 900 mg q 8 hr

All antibiotic solutions were infused IV in 100 ml of 5% dextrose over a 30-minute period. All antibiotics are infused separately except gentamicin and clindamycin are mixed in the same bag.

TABLE IV
SUMMARY OF TROSPECTOMYCIN PATIENTS

Patient Number	Pretreatment Pathogens C = cervix other endometrium	# of Doses of Drug	Days Between Discharge and Posttreatment Culture	Bacteriologic Cure	Days Between Discharge and Follow-up Visits	Clinical Cure at Follow-up Visits
1	No Growth	11	N/A	N/A	2, 33	Yes
2	No growth	12	N/A	N/A	2	Yes
3	Chlamydia (C)	13	6, 21	Yes, Yes	2, 6, 21	Yes
6	No growth	9	N/A	N/A	50	Yes
8	Gardnerella	12	@ Discharge	Yes	22	Yes
10	B-hemolytic strep	11	2	No	2, 48	Yes
11	Bacteroides sp	11	21	Yes	21	Yes
	Peptococcus sp		21	Yes		
13	Pseudomonas aeruginosa	11	1	Yes	1, 27	Yes
	Chlamydia (C)		1, 27	Yes, Yes		
16	B-hemolytic strep	14	2	No	2, 39	Yes
17	B-hemolytic strep	10	2	No	2, 21	Yes
	Alpha hemolytic strep		2	Yes		
	Peptostreptococcus anaerobius		2	No		
18	B-hemolytic strep	11	3	No	3, 13	Yes
21	Culture lost	11	N/A	N/A	2	Yes

ent compound spectinomycin.¹⁴ Chemically, trospectomycin is 6-propyl-spectinomycin and its structure is shown in Figure 1. It is normally dispensed as the sulfated pentahydrate. It lacks the amino sugars in its glycosidic linkage which are thought to be associated with the ototoxicity and/or nephrotoxicity of the aminoglycosides. Trospectomycin has been shown to be effective

against a variety of organisms: gram positive aerobes, anaerobes, Chlamydia, Mycoplasma, and Ureaplasma. Significant side effects are reported to be minimal with reversible increases of liver enzymes noted only rarely, mild reversible perioral paresthesia, and "first dose effect" consisting of ortho-static hypotension.¹⁴

It is interesting that all trospectomycin patients

TABLE V
SUMMARY OF CLINDAMYCIN PATIENTS

Patient Number	Pretreatment Pathogens C = cervix	# of Doses of Drug	Days Between Discharge and Posttreatment Culture	Bacteriologic Cure	Days Between Discharge and Follow-up Visits	Clinical Cure at Follow-up Visits
4	No growth	11	N/A	N/A	Lost to Follow-up	N/A
5	Chlamydia (C)	9	23	Yes	23	Yes
9	Bacteroides sp	11	2	Yes	2	Yes
	Peptococcus sp		2	Yes		
	Microaerophilic strep		2	Yes		
12	Bacteroides sp	11	2	Yes	2	Yes
	Peptococcus sp		2	No		
14	Proteus mirabilis	11	3	Yes	3	Yes
	E. Coli		3	No		
	Enterococcus sp		3	No		
	Bacteroides fragilis		3	Yes		
15	Propionibacterium sp	11	3	Yes	3, 37	Yes
19	Enterococcus sp	11	45	No	21, 45	Yes
20	B-hemolytic strep	11	2	Yes	2, 21	Yes

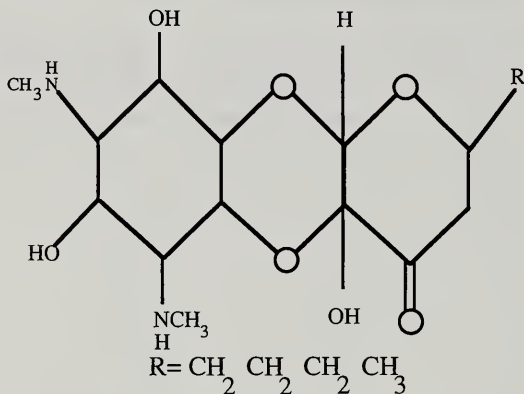


Figure 1. Chemical Structure of Trospectomycin.

were clinical cures at the time of discharge and all were seen subsequently at one or more follow-up visits at which time they continued to be clinical cures. Eight of the 12 patients grew out organisms from the endometrium or Chlamydia from the cervix. A total of 12 organisms were isolated and bacteriologic cures were obtained in seven (58 percent). A bacteriologic cure is defined as the presence of the pathogenic organism in the pretreatment culture which is absent in the post-treatment culture. Four cultures of beta hemolytic Strep resulted in no bacteriologic cures despite the fact that all patients were clinical cures. Two patients with positive Chlamy-

dia cultures and the patient with positive anaerobic cultures (Bacteroides sp, and Peptococcus sp) were bacteriologic cures while the patient with Peptostreptococcus anaerobius was not.

All clindamycin patients were clinical cures at the time of discharge and seven out of eight were seen at follow-up and continued to be clinical cures. Seven of the eight patients grew out organisms from the endometrium or Chlamydia from the cervix. A total of 13 organisms were isolated with bacteriologic cures in nine (69 percent). One patient with a positive culture for beta hemolytic Strep and three patients with five positive anaerobic cultures (Bacteroides sp, Peptococcus sp, Microaerophilic strep, Bacteroides fragilis, and Propionibacterium sp) were bacteriologic cures. One patient with positive cultures of Bacteroides sp and Peptococcus sp was cured of the Bacteroides but not of the Peptococcus.

Since all patients in both groups were clinical cures, it is not appropriate to compare the two groups statistically to evaluate the efficacy of the two antibiotic regimens. It is obvious that there would be no statistical difference between the two groups.

Our customary treatment of patients with post-cesarean endometritis is with triple antibiotic therapy (regimen C in Table III). We evaluated

the efficacy of this treatment in 12 patients by retrospective chart review. No pre or post-treatment cultures were obtained. All patients in this randomly picked group were clinical cures.

Not only did treatment fail to eradicate all organisms from the post-treatment cultures, but occasionally we isolated an additional organism in the post-treatment culture which was not present in the pretreatment culture. We can only speculate as to the fact that treatment can effect a clinical cure without effecting a bacteriologic cure. Either the positive endometrial cultures in the post-treatment specimens are contaminants from the vagina or cervix or complete eradication of all organisms from the endometrium is not necessary to effect a clinical cure. At any rate our usual policy of treating postcesarean endometritis by clinical response rather than bacteriologic culture would seem to be a reasonable one. Certainly one could make an argument for obtaining pretreatment cultures but post-treatment cultures are clearly not necessary for clinical management.

SUMMARY

Three different antibiotic regimens (trospetomycin plus azteonam, clindamycin plus azteonam, and triple antibiotics-ampicillin plus clindamycin plus gentamicin) were all effective in treating patients with postcesarean endometritis. Patients are frequently cured clinically despite the fact that the offending organisms may be isolated in post-treatment cultures. Treatment of postcesarean endometritis without obtaining endometrial cultures is acceptable gynecologic practice. Obtaining post-treatment cultures is clearly not cost effective nor clinically beneficial. Drug treatment efficacy should be evaluated by clinical response. This communication is the first to report the new antibiotic, trospetomycin, in the treatment of postcesarean endometritis. Further clinical trials are currently underway. □

REFERENCES

1. Watts DH, Eschenbach DA, Kenny GE. Early postpartum endometritis: The role of bacteria, genital mycoplasmas, and chlamydia trachomatis. *Obstet. Gynecol.* 73:52-60, 1989.
2. Eschenbach DA, Wagner GP. Puerperal infections. *Obstet. Gynecol.* 23:1003-1034, 1980.
3. Watts DH, Krohn MA, Hillier SL, Eschenbach DA. Bacterial vaginosis as a risk factor for post-cesarean endometritis. *Obstet. Gynecol.* 75:52-58, 1990.
4. Newton ER, Thomas JP, Gibbs RS. A clinical and microbiologic analysis of risk factors for puerperal endometritis. *Obstet. Gynecol.* 75:402-406, 1990.
5. Watts HD, Hillier SL, Eschenbach DA. Upper genital tract isolates at delivery as predictors of post-cesarean infections among women receiving antibiotic prophylaxis. *Obstet. Gynecol.* 77:287-292, 1991.
6. Peterson CM, Medchill M, Gordon DS, Chard HL. Cesarean prophylaxis: A comparison of Cefamandole and Cefazolin by both intravenous and lavage routes, and risk factors associated with endometritis. *Obstet. Gynecol.* 75:179-182, 1990.
7. Phillips LE, Faro S, Martens MG, Baker JL, Goodrich KH, Turner RM, Riddle GD. Postcesarean microbiology of high-risk patients treated for endometritis. *Current Therapeutics Research.* 42:1157-1165, 1987.
8. Faro S, Martens M, Hammill H, Phillips LE, Smith D, Riddle G. Ticarcillin/clavulanic acid versus Clindamycin and Gentamicin in the treatment of post-cesarean endometritis following antibiotic prophylaxis. *Obstet. Gynecol.* 73:808-812, 1989.
9. Gilstrap LC, Cunningham FG. The bacterial pathogenesis of infection following cesarean section. *Obstet. Gynecol.* 53:545-549, 1979.
10. Martens MG, Faro S, Maccato M, Riddle G, Hammill HA. Susceptibility of female pelvic pathogens to oral antibiotic agents in patients who develop postpartum Endometritis. *Obstet. Gynecol.* 164:1383-1384, 1991.
11. Berenson AB, Hammill HA, Martens MG, Faro S. Bacteriologic findings of post-cesarean endometritis in adolescents. *Obstet. Gynecol.* 75:627-629, 1990.
12. Hemsell DL, Cunningham FG, DePalma RT, Nobles BJ, Heard M, Hemsell PG. Cefotaxime sodium therapy for endomyometritis following cesarean section: Dose-finding and comparative studies. *Obstet. Gynecol.* 62:489-497, 1983.
13. Faro S, Phillips LE, Baker JL, Goodrich KH, Turner RM, Riddle GD. Comparative efficacy and safety of Mezlocillin, Cefoxitin, and Clindamycin plus Gentamicin in postpartum endometritis. *Obstet. Gynecol.* 69:760-766, 1987.
14. Trospetomycin Sulfate. Investigator Brochure, 1989.

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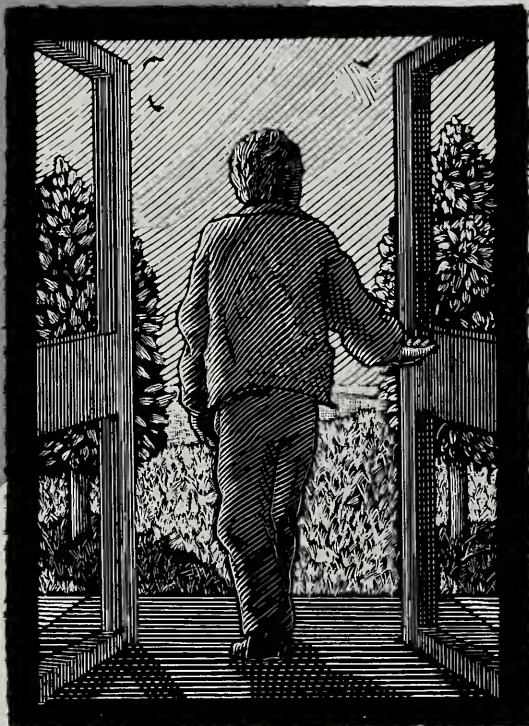
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SCMA NEWSLETTER

A PUBLICATION OF THE SOUTH CAROLINA MEDICAL ASSOCIATION
Joy Drennen, Editor
798-6207, in Columbia

Contributions welcomed
1-800-327-1021, outside Columbia

June 1992

MEDICARE UPDATE

Recalculated Codes: You are reminded that you received a *Medicare Advisory* from BC/BS of SC dated May, 1992 (SB-04-0592). This advisory listed codes which have been recalculated. If you are a nonparticipating physician, you must use these new limiting charges immediately.

In some cases, the new charges are higher than originally calculated; you can receive the higher reimbursement for any services after December 31, 1991 by sending all claims being refiled to: *Medicare, P.O. Box 100190, Columbia, SC, 29202, ATTN: Bruce Carter, Director Medicare Part B.*

Anesthesia Workshop: Medicare is sponsoring two identical half-day workshops to review anesthesia billing. There is no charge for the workshops. Seating is limited, so you should preregister by June 19, 1992. You should have received your advisory with the registration form by now.

Date: Wednesday, June 24, 1992

Time: 9:00 am - 12:00 noon or 1:30 pm - 4:30 pm

Place: Richland Memorial Hospital Auditorium
I-277 & Bull Street ☐

MEDICAID UPDATE

Services to Pregnant Women and Children Under 21: The April 10, 1992 Medicaid Bulletin explains the Addendum to Physician's Enrollment Agreement, which applies to all physicians who provide services to pregnant women and children under 21. The criteria listed on the addendum were established as a result of OBRA 1990 and became effective January 1, 1992. Please note that you only need to meet one of the criteria listed. For example, if you have hospital privileges, you fulfill the requirements.

The SC Medicaid Program has requested a clarification from HCFA on the requirements for updating physician enrollment. In the meantime, all providers who received the April 10 bulletin should complete the addendum and return it.

Crossover Claim Forms: Beginning on July 1, 1992, regardless of date of service, whenever you submit hard copy Medicare/Medicaid crossover claims (Form HHSFC 208), you must include the Medicare Explanation of Benefits (EOMB) or the Medicare remittance notice.

Crossover claims submitted without the proper Medicare information will be returned to the provider. All Medicaid paper (hard copy) claims should be submitted to the following address: *Medicaid Claims, P.O. Box 1412, Columbia, SC, 29202-1412.* The address for Medicaid inquiries only is: *Physician Services, SHHSFC, P.O. Box 8206, Columbia, SC 29202-8206.*

Smoking Cessation Products: Providers are reminded of the Medicaid policy which states that smoking cessation products are **not reimbursable**. This includes all smoking cessation products (e.g., gum and patches).

Hospital Manual Revision: Please review the *Medicaid Bulletin* to hospital providers dated May 5, 1992. The Minor Surgical Procedure List (Exhibit 209A) shows the ICD-9 codes, with corresponding CPT codes, which require prior approval when performed on an inpatient basis and billed as the principal procedure. The revised list is effective for dates of service beginning July 1, 1992. All claims regardless of date of service will be edited according to the revised list. ☐

Most large insurance companies are accepting the new forms. However, Kohler Company in Spartanburg will **not** accept the new forms. Continue to use the old HCFA-1500 forms. *If you know of others who are not accepting the new forms, please contact Cindy Osborn at the SCMA.* □

CLIA SUMMARY

Registration forms have been mailed to physicians during May. If you perform any lab work in your office, you must register with the Health Care Financing Administration (HCFA).

CLIA pertains to **all** lab work, not only Medicare or Medicaid patients. However, effective September 1, 1992, your Medicare reimbursement will be denied if you have not registered.

If you perform lab work and have not yet received a registration form, contact the Region 4 HCFA Office in Atlanta at (404) 841-2361. *HCFA, CLIA Inquiry, Suite 601, 101 Marietta Tower, Atlanta, GA 30323.*

The SCMA is planning to conduct CLIA workshops in July or August. *If you would like a summary of the CLIA regulations, please call the SCMA. For questions, contact Barbara Whittaker at the SCMA.*

WORKERS' COMPENSATION

The following changes are effective immediately:

- CPT Code 32705 has a new unit value of 31 and a new allowable of \$496.00.
- CPT Code 31622 has a new unit value of 20 and a new allowable of \$320.00.
- Trigger point injections and office visits are both allowable charges when performed on the same day. Use CPT Code 99025 for the office visit. Code 99025 may be used for **new and established** patients. □

DHEC PROVIDES HBV VACCINES

On June 15th, 1992, DHEC will begin providing the HBV vaccine series at its clinics for infants born on or after January 1, 1992. Physicians who use DHEC vaccine for their EPSDT and indigent patients may obtain the vaccine for these infants from their local health department. DHEC recommends that all physicians begin providing this vaccine to infants under their care. For more information, contact your local or district health office or the DHEC Division of Immunization (737-4160). □

Employee Information Posters: Federal law requires all employers to prominently post specific employee information posters at each business location. These posters contain information on the Age Discrimination in Employment Act, the Civil Rights Act, the Fair Labor Standards Act, the Williams Steiger Occupational Safety & Health Act, the Employee Polygraph Protection Act and the New Minimum Wage. You can obtain these posters **at no charge** by calling or writing *Jane Corder, SC Department of Labor, P.O. Box 11329, Columbia, SC 29211; 734-9600.* For your specific OSHA questions, call *Bob Peck (734-9599) or Don Gissendanner (734-9632) at the Department of Labor.*

Bloodborne Pathogens Regulations: Employee training and recordkeeping requirements of the new OSHA Bloodborne Pathogens Standard must be completed by June 24, 1992.

Employee Training: Any employee with occupational exposure to bloodborne pathogens must be provided with training during working hours, and at no cost to the employee. Training must be given at the time of initial assignment and once annually thereafter. Additional training is needed when existing tasks are modified or new tasks affect the employee's exposure. Persons conducting training must be knowledgeable about the subject matter. Training must contain the following elements:

- How to obtain a copy of the standard and an explanation of the contents;
- Information on the epidemiology and symptoms of bloodborne diseases;
- Ways in which bloodborne pathogens are transmitted;
- Explanation and location of the exposure control plan;
- Information on how to recognize tasks that might result in occupational exposure;
- Explanation of the use and limitations of work practice and engineering controls, and personal protective equipment;
- Information on the types, selection, proper use, location, removal, handling, decontamination, and disposal of personal protective equipment;
- Information on the HBV vaccination such as safety, benefits, efficacy, methods of administration, and availability;
- Who to contact and what to do in an emergency;
- How to report an exposure incident and information on post-exposure evaluation and followup;
- Information on warning labels and signs, where applicable, and color-coding; and
- A question and answer session.

(Continued on page 3)

OSHA does not require that the physician-employer undertake CME or that employees receive "certified" training, contrary to what some advertisements for training have stated. Training can be provided by the physician-employer with or without aids such as booklets or videotapes, as long as all the required elements are covered.

Recordkeeping: Employers also must preserve and maintain for each employee an accurate record of occupational exposure according to OSHA's rule governing access to employee exposure and medical records.

Medical records must be kept confidential and maintained for at least the duration of employment plus 30 years. These records must include the following information:

- Employee's name and social security number;
- Employee's HBV vaccination status including vaccination dates and any medical records related to the employee's ability to receive vaccinations;
- Results of examinations, medical testing, and post-exposure evaluation and followup procedures;
- Healthcare professional's written opinion; and
- A copy of the information provided to the healthcare professional.

The bloodborne pathogens standard also requires employers to maintain and keep accurate training records for three years and to include the following:

- Training dates;
- Content or a summary of the training;
- Names and qualifications of trainer(s); and
- Names and job titles of trainees.

Upon request, both medical and training records must be made available to the Director of the National Institute for Occupational Safety and Health (NIOSH) and the Asst. Secretary of Labor for Occupational Safety and Health. Training records must be available to employees or employee representatives upon request. An employee's medical records can be obtained by that employee or anyone having the employee's written consent. Also, if the employer ceases to do business, medical and training records must be transferred to the successor employer. If there is no successor employer, the Director, NIOSH must be contacted for specific directions regarding disposition of the records at least three months prior to intended disposal. ☐

HEALTH CARE POWER OF ATTORNEY BECOMES LAW

Governor Campbell has signed legislation authorizing a statutory form for a durable power of attorney to be used for health care purposes.

Before enactment of the law, individuals who desired to legally appoint another person to make decisions regarding health care, if they were unable to do so, could make such a document with the assistance of an attorney. This document is referred to as a durable power of attorney for health care. The new law establishes an authorized form to be used by anyone desiring to make an appointment without retaining an attorney to draft the document.

Many believe a health care power of attorney is a superior method of naming a person whom you trust to make healthcare decisions for you when you are unable to do so. There is no requirement of a "terminal condition" for the document to become operational as with a living will, execution of the document is simpler, and a wider range of healthcare decisions is authorized by the document than the living will law allows.

In order for the document to become operational, a physician must certify that the patient is unable to appreciate the nature and implications of his/her condition and proposed health care, to make a reasoned decision concerning proposed health care, or to communicate their decision regarding health care in a clear manner. Optimally, another physician should concur in this certification, although the act allows for the person appointed under the document to make the second certification in some cases. After this certification is made, all healthcare decisions can be made by the appointed person until the period of incapacity ceases.

If a patient has both a health care power of attorney and a living will, the living will takes priority in situations where the living will is operational (e.g., a "terminal condition" where death will occur in a relatively short period of time without the use of life-sustaining procedures). In these situations, the agent under the durable power of attorney cannot make decisions and the terms of the living will must be followed.

To obtain copies of the form, call the SCMA office or write the *SC Joint Legislative Committee on Aging*, 212 Blatt Building, P.O. Box 11867, Columbia, SC 29211. (Please send stamped, self-addressed envelope.) For copies of the law, call the *Legislative Information Systems* at 734-2060 (in Columbia) or 1-800-922-1539 (in SC) and ask for Bill #R.340. ☐

STATE HEALTH PLAN NEW PARTICIPATING PHYSICIAN NETWORK

Early in June, the State Division of Insurance Services mailed a proposed contract and fee schedule to all SC physicians. This mailing requested your participation in a physician network for the State Health Plan. The plan insures state employees, teachers, other public employees and retirees, and their dependents - over 300,000 people in all. This network will become effective January 1, 1993; however, you are requested to return the contract to BC/BS no later than July 31, 1992, if you wish to be included in their directory.

The SCMA provides the following summary to assist you in understanding this proposed contract:

A. Allowable fees and patient copays and deductibles will be the same for participating and nonparticipating physicians. (Participating physicians are those who sign contracts.)

B. Only participating physicians will receive direct payment from BC/BS, the third party administrator for the State Health Plan. Payments will be provided to patients when services are provided by nonparticipating physicians.

C. Participating physicians may not balance bill patients beyond applicable deductibles and coinsurance. They may bill patients for services considered by the plan to be medically unnecessary, provided they have received prior written approval from their patients.

D. Only participating physicians will be included in the directory to be published and distributed to state employees.

E. The contract is for a period of one year. Prior to the expiration of the contract, the fees for the next year will be mailed and physicians will have the opportunity to either renew or cancel their contracts.

F. Contracts can be cancelled by either the physician or the plan with 120 days notice.

G. Mental health services are excluded. If you are a psychiatrist and received a contract, this was sent to you in error.

BC/BS will conduct workshops as follows: June 16 in Florence; June 17 in Greenville; June 23 in Columbia; June 24 in Charleston; and June 30 in Aiken. A registration form was included in your packet.

If you have questions, call the following people at BC/BS at 788-0222: Marge Kennedy, ext. 2501 or

Pat Dickerson, ext. 2849. Outside Columbia, call 1-800-288-2227. You may also contact Barbara Whittaker at the SCMA office. □

CLARIFICATION SC INFECTIOUS WASTE ACT

There has been a great deal of confusion regarding registration as a small quantity generator of infectious waste. Any generator which produces less than 50 pounds of waste per calendar month may qualify for this status. The question has been whether this limit applies to individual physicians or group practices.

According to DHEC, the intent of the regulation was that each site would register as the generator, not each individual physician. The site would meet the quantity limit cumulatively. In group practices, the practice should register as one generator. Even a single multi-practice office building may register as one site. However, in this case all practices would be subject to joint and several liability.

A physician in a group practice may register individually; however, they must maintain their waste separately when it is produced, stored, and disposed. The waste must be traceable to the individual physician. **Contact Phil Morris, DHEC at 734-5448 with any questions.**

SAFE HARBORS WORKSHOP

The SCMA is co-sponsoring a workshop with the SC Hospital Association entitled "Financial Relationships with Referral Sources: Safe Harbors Now & In the Future". Failure to comply with the safe harbors can result in criminal prosecution or civil sanctions under the anti-kickback provisions of the Fraud and Abuse statute.

Through this workshop you will understand how to structure ventures within a safe harbor and how the new rules affect physician compensation and contractual arrangements.

The workshop will be held July 28, 1992 at the Embassy Suites Hotel, I-126 at Greystone Blvd. in Columbia from 9:30 am - 4:00 pm. The fee is \$50 which includes lunch and a continental breakfast. *For more information call Doris Clevenger at the SC Hospital Association at 796-3080.* □

NEUROLEPTIC MALIGNANT SYNDROME*

TERRANCE P. MCHUGH, M. D.**

Neuroleptic malignant syndrome (NMS) is a life-threatening, hyperpyrexic syndrome which develops in 0.5 to one percent of all patients exposed to neuroleptics.¹ Both sexes and all ages are at risk; however, 80 percent of cases involve men less than 40 years of age.² NMS is currently believed to be caused by the disruption of the central dopaminergic receptor sites in the hypothalamus and basal ganglia which regulate temperature and muscle tone.^{3,4} Predisposing factors include use of long acting depot preparations, exhaustion, dehydration, and concurrent chronic illnesses or organic brain syndrome.^{1,2} There is a reported case mortality of 15 to 40 percent with untreated NMS; mortality is higher at both extremes of age or in cases involving the longer acting agents.^{5,6}

BRIEF CASE REPORT

A 38-year-old schizophrenic male patient was transferred from a psychiatric hospital with a rectal temperature of 106.6° F. He had received a 100 mg intramuscular injection of DepoHaldol™ (haloperidol decanoate) two days previously for control of agitation. He was also being treated with clonidine for chronic hypertension.

On arrival, vital signs were as follows: rectal temperature, 106.5°F; blood pressure, 190/150 mmHg; pulse, 136 beats/min; and respiratory rate, 18 breaths/min. Examination revealed a lethargic man with a supple neck and no rash. The remainder of the physical examination was normal except for marked rigidity of all four extremities.

The patient was treated in the ED with cooling blankets and 150 mg of intravenous dantrolene sodium. Following admission, the patient developed acute rhabdomyolysis, associated

renal insufficiency and pneumonia. Creatine phosphokinase (CPK) levels peaked at 48,000 IU/L. Following two weeks of critical care, the patient recovered and was transferred back to the psychiatric hospital.

DISCUSSION

Neuroleptic agents, the so-called "major tranquilizers," include the phenothiazines, butyrophenones and thioxanthenes. Haloperidol (Haldol™) and fluphenazine deconoate (Proxilin™)—both potent dopamine-receptor antagonists—account for 90 percent of all cases of NMS; less often implicated are chlorpromazine, thiothixene, thioridazine, trifluoperazine, promethazine and prochlorperazine.^{2,4} A particular drug's potential to cause NMS parallels its anti-dopaminergic potency.¹ Although NMS can occur at any time during treatment, it is often associated with a new treatment regimen, an increase in dosage or the use of a parenteral form.³ The onset of symptoms can occur within hours of an initial dose but more typically is delayed two to three days.⁷ Once established, symptoms progress rapidly over 24 to 72 hours.³

NMS has also been described following the use of non-neuroleptic agents such as lithium, reserpine, cocaine, hydroxyzine, levodopa, metoclopramide and other agents.^{2,3} Interestingly, NMS has also developed in some patients following the withdrawal of antiparkinsonism agents such as levodopa or amantadine, which are both dopaminergic agonists.^{6,9} Some authors have suggested NMS is a misnomer and have advocated that the syndrome be renamed "acute dopamine depletion syndrome" or "drug-induced central hyperthermic syndrome."^{6,8}

Clinically, NMS causes an altered mental status, hyperthermia, muscle rigidity, and autonomic instability; unless all components are present, the diagnosis is suspect.⁶ Levenson has recently suggested that NMS can be diagnosed using a com-

*From the Department of Emergency Medicine, Richland Memorial Hospital, Columbia, SC.

**Address correspondence to Dr. McHugh at the Department of Emergency Medicine, 5 Richland Medical Park, Columbia, SC 29203.

bination of major and minor criteria.¹⁰ The major criteria include fever, muscular rigidity, and elevated CPK levels; minor criteria include tachycardia, tachypnea, diaphoresis, abnormal blood pressure, altered mental status, and leukocytosis. The presence of three major criteria or two major and four minor criteria makes the diagnosis highly likely.¹⁰

In NMS, core body temperatures often exceed 106°F and the muscle rigidity is described as having a "lead pipe" quality.⁷ Increased chest wall rigidity can lead to hypoventilation and respiratory failure.¹³ Altered mental status ranges from agitation to coma.³ Other clinical presentations include difficulty speaking and swallowing, hypertension or hypotension, gastrointestinal bleeding, disseminated intravascular coagulation, seizures and hepatic failure.^{7,8} Myoglobinuric renal shutdown can develop secondary to rhabdomyolysis caused by the intense muscle rigidity.¹ Death is usually secondary to respiratory or renal failure, arrhythmia or cardiovascular collapse.¹⁴

Laboratory findings are nonspecific but can include an increased leukocytosis, ranging from 12,000 to 30,000 cells/ml; increased CPK levels, rising up to 100,000 IU/L; and altered serum electrolytes or liver enzymes.⁷ Severe hyperkalemia can develop secondary to rhabdomyolysis. CSF analysis and EEG findings are normal.²

The differential diagnosis of NMS can be found in Table 1; most can be differentiated based upon their initial presentation and associated clinical signs and symptoms. Because it is often confused with NMS, malignant hyperthermia (MH) associated with anesthesia deserves special attention. MH is a life-threatening illness associated with extreme hyperthermia and occurs in approximately 1:15,000 to 1:50,000 operative cases.¹¹ MH follows the use of inhalational halogenated agents, often administered in conjunction with a depolarizing muscle relaxant such as succinylcholine.⁸ MH is caused by increased myoplasmic calcium levels and has a genetic basis; NMS does not.^{2,11} MH is a peripheral, postsynaptic phenomena; NMS is a central, presynaptic syndrome.¹¹ Both conditions lead via a common pathway to hyperthermia secondary to muscle rigidity.⁴ A con-

**TABLE 1
DIFFERENTIAL DIAGNOSIS OF
NEUROLEPTIC MALIGNANT
SYNDROME**

Infectious

- Sepsis
- Encephalitis
- Meningitis
- Tetanus
- Rabies

Toxic

- Malignant Hyperthermia (Anesthesia)
- Anticholinergic Syndrome
- Monoamine Oxidase Inhibitor Interactions
- Strychnine Poisoning

Psychiatric

- Severe Dystonic Reaction
- Akinetic Mutism
- Lethal Catatonia

Miscellaneous

- Heat Stroke
- Status Epilepticus
- Primary Rhabdomyolysis
- Thyrototoxicosis
- Polymyositis

trolled curare test can help distinguish the two; curare has no effect in MH, but will cause a flaccid paralysis in NMS.¹⁹

Because there is no antidote, the treatment of NMS is largely supportive, with the primary step being the discontinuance of the offending agent. Following discontinuance of an oral neuroleptic medication, recovery occurs within five to 14 days; recovery is more prolonged following use of a depot preparation and may take months.¹⁴

Additional therapeutic measures include ensuring a proper airway and maintaining adequate ventilation, monitoring fluid and electrolyte balance, maintaining urine output, and trying to maintain a normal core temperature. Although dialysis aids in the treatment of myoglobinuric renal failure, it does not remove neuroleptic agents, which are highly protein bound.¹

Although there are no randomized controlled clinical trials to support their effectiveness in NMS, many clinicians¹⁻¹³ believe the following dopamine agonists or muscle relaxants, used in

conjunction with the measures cited above, might be of some therapeutic benefit:

1. Dantrolene sodium (Dantrium®) is a derivative of hydantoin and acts as a direct-acting, smooth-muscle relaxant. Dantrolene is effective in the treatment of malignant hyperthermia; it prevents the release of calcium from the sarcoplasmic reticulum.^{2,11} The resulting muscle relaxation causes both a decrease in oxygen consumption and a decrease in core temperature.¹ The current recommended dose is two to three mg/kg/day intravenously or orally.¹ It is contraindicated in patients with active liver disease.²

2. Diazepam produces favorable changes because of GABA-induced effects on dopamine turnover.³ A dosage of four mg intravenously every four to six hours is recommended.³

3. Bromocriptine mesylate (Parlodel™) is a central acting dopamine agonist and prolactin inhibitor. Used in the treatment of Parkinson's disease, bromocriptine can reduce muscle rigidity within a matter of hours.^{2,6} A dosage of 2.5 to 10 mg is given three times a day by mouth; it is often used in conjunction with sodium dantrolene. Because bromocriptine is a derivative of the ergot alkaloids, it has a high incidence of adverse effects.

4. Levodopa and carbidopa are combined in some commercial drug preparations (Sinemet™). Levodopa is a metabolic precursor of dopamine; it is widely used to relieve the muscle rigidity of Parkinson's disease. Carbidopa inhibits the peripheral transformation of levodopa to dopamine, allowing more levodopa to be transported into the brain.⁴ Caridopa should only be used in conjunction with levodopa and has no effect when used alone.

5. Amantadine HCl is given orally in a dose of 100 mg two to three a day.² It appears to act as a dopamine agonist.³ When used with levodopa, it may be more useful than the administration of either agent alone.

6. Electroconvulsive therapy induces dopamine turnover in the brain.^{2,3,7} Because of its known adverse effects, it should only be considered in life-threatening cases of NMS that do not respond to other interventions.²

There appears to be little long-term sequelae after recovery from the acute illness.¹² However, those with an underlying psychiatric disorder may require another trial of neuroleptic therapy. Rechallenge should be done cautiously and only after a two-week interval following the resolution of symptoms.^{4,13} A less potent agent should be used initially and, if possible, parental agents should be avoided.¹³ CPK and CBC levels should be monitored.¹³ Chen et al² followed a group of 24 NMS patients for a mean of 15 months; neuroleptic agents were safely reintroduced in most patients and no patient had a relapse. Other authors state that from 50 to 92 percent of patients have tolerated reintroduction of a neuroleptic agent.^{4,13} Interestingly, even rechallenge with the original neuroleptic agent may not result in a recurrence of NMS.¹

SUMMARY

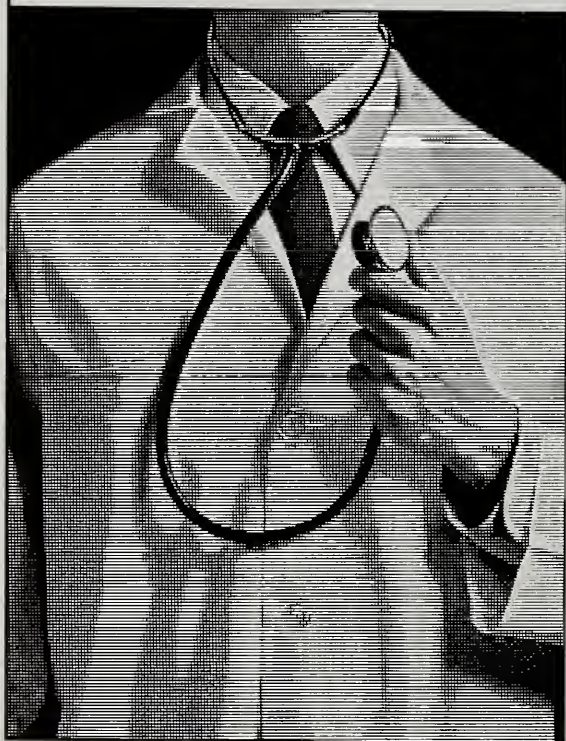
NMS is a life-threatening, hyperpyrexia syndrome that follows the blockage of certain central dopaminergic receptor sites; it is commonly associated with the use of neuroleptic medications. Clinical signs usually include hyperthermia, altered mental status, muscle rigidity, and autonomic instability. Treatment is mainly supportive. Dopamine agonists and muscle relaxants are often used in therapy; however, their effectiveness has never been adequately determined in controlled studies. □

REFERENCES

1. Guze BH, Baxter LR: Neuroleptic malignant syndrome. *New Engl J Med* 1985; 313: 163-166.
2. Harpe C, Stoudemire A: Aetiology and treatment of neuroleptic malignant syndrome. *Med Tox* 1987; 2:166-176.
3. Guerrero RM, Shifrar KA: Diagnosis and treatment of neuroleptic malignant syndrome. *Clin Pharm* 1988; 7: 697-701.
4. Schneider SM: Neuroleptic malignant syndrome: controversies in treatment. *Am J Emerg Med* 1991; 9: 360-362.

5. Numa A: Neuroleptic malignant syndrome in children. *Med J Australia* 1991; 155: 417-419.
6. Keyser DL, Rodnitzky RL: Neuroleptic malignant syndrome in Parkinson's Disease after withdrawal or alteration of dopaminergic therapy. *Arch Int Med* 1991;151: 794-796.
7. Parikh AM, Camara EG: Neuroleptic malignant syndrome. *Amer Fam Pract* 1988; 37: 296-298.
8. Heyland D, Sauve M: Neuroleptic malignant syndrome without the use of neuroleptics. *Can Med Assoc J* 1991;145: 817-819.
- Friedman JH, Feldman RG: A neuroleptic malignant-like syndrome due to levodopa therapy withdrawal. *JAMA* 1985; 254: 2792-2795.
10. Levenson JL: Neuroleptic malignant syndrome. *Am J Psychiatry* 1985;142:1137-1145.
11. Tomarken JL, Britt BA: Malignant hyperthermia. *Ann Emerg Med* 1987;16: 1253-1265.
12. Chen CC, Reist C, Ko WK: A follow-up of patients with neuroleptic malignant syndrome. *Hosp Comm Psych* 1991:197-199.
13. Olmsted TR: Neuroleptic malignant syndrome: guidelines for treatment and reinstitution of neuroleptics. *S Med J* 1988; 81: 888-891.

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MEDICINE, ILLNESS, AND CREATIVITY*

MARIA BAENS, M. D.**

During my residency, I experienced what came close to being total emotional burnout. My training has always required a fine balance between growing as a person and growing as a physician. I have always struggled for objectivity, what Sir William Osler called "equanimity." I have decided that there is more to medicine than pathophysiology partly perhaps because I have had this intrinsic fault of seeking meaning in everything. More often than not, our collective experience has been to subjugate emotional and creative growth to the primary aim of mastering scientific knowledge. Hence, we find ourselves learning about life and death, illness and suffering, very early in our medical careers on our own time.

Out of this personal pain, I thought of how I could make my medical career more potent to me. I decided that it had to be multidimensional and it had to include my interest in the humanities.

Needless to say, this is not for everyone. But it still is universal in all of us to seek to cultivate other aspects of our lives. Whether playing a game of golf, or playing the saxophone, writing a short story or writing a song, we try to maintain the diversity we are naturally endowed with. Our esteemed former Chairman Dr. O'Neill Barrett said to me that as human beings we are alive because we continue to learn. I believe he meant this because at this same meeting he excitedly told me how he was learning to use the computer—this from a man whose teaching continues to inspire us.

Part of what I've learned so far is that in the pursuit of the science of medicine, there is the

underlying challenge to acquire the artistry of its practice.

As physicians, we feel an obligation to alleviate suffering but the objectivity that is required of us fortunately allows us distance from another person's pain. Suffering is thus a solitary experience.

What is it like to lose a sense of self? Part of being a whole person is the good health we take for granted. While healthy, we do not necessarily think of our bodies as separate from the rest of us, that which we can call the mind, or the soul. Disease is the physiologic process in which body functions deviate from normal. There then follows a gradual or sudden loss of control. The word "illness" then applies to the perceptive process by which a person assumes the role of patient and comes to terms with the disease that has disengaged the body from the self.

By no means is this an exhaustive discussion. It is merely an attempt to show how there is so much more to achieve out of our medical education—such as a sense of that human resilience that allows us to transcend disease, fulfill our creative drives, and for the lucky ones, attain self-discovery.

How do we incorporate all of this into our medical training? How do we impart this to our medical students, our colleagues, our family and friends? I think above anything else, we are persons first. I am a person first before I am a physician, before I am a patient.

Harvard Medical School implemented a new program called the New Pathway² to answer the growing concern that we as physicians have become too impersonal to our patients. The authors, Dr. William T. Branch, et. al., wrote, "Practitioners and medical educators agree that medical students must acquire humanistic and interpersonal skills.... We define a humanistic physician as one who understands patients as people and consider their psychological and

*This paper was presented in part by Dr. Baens, a resident in medicine, at Internal Medicine Grand Rounds on January 24, 1992.

**Address correspondence to Dr. Baens at the Department of Medicine, 2 Richland Medical Park, Suite 207, Columbia, SC 29203.

social features in his or her assessments and treatments, who is compassionate and ethically sensitive..."².

These are certainly big words. The program itself is demanding, implemented over three years, requiring a faculty to student ratio of one to four, from multiple subspecialties—50 percent medicine, 22 percent psychiatry, 20 percent pediatrics, six percent social medicine, two percent surgery requiring hours of tutorials, sessions with fellow students, and patient interviews.

We certainly must await a prospective study of this program compared to a more traditional curriculum in which developing technical skills certainly precedes developing social skills. Just think how each of us at some time have rolled our eyes at spending any more time talking about medical ethics when we have procedures to do?

Illness can be perceived as a punishment from the gods—something for which we can therefore seek atonement and forgiveness. When we recognize this belief in our patients we can sometimes effect a cure. I remember a physician who had grown weary of his patient's belief that the dysuria of his urinary tract infection was a root placed upon him by his ex-wife for philandering. Finally, the doctor said, "I will give you Pyridium. It is very potent stuff. Use it only for three days. Your urine will turn orange and your root will be lifted." The patient was very grateful. I sometimes wonder if we are any different from the primitive tribal doctors or the exorcists of the Catholic Church.

Illness can be perceived as a random occurrence or as destiny—either way, there is a sense of victimization for which no atonement can bring salvation. It then becomes a struggle with what has been pre-destined, an ill fate—which in the words of Dr. Drew Leder³ is "an exile, a banishment from the customary world."³

The American saying, "It's nothing personal" or "Don't take it personally" has often puzzled me. Every experience is a personal one to its owner. When ill, the wholeness of a person is threatened and he cannot help but think that survival is not only based on the cure of the disease but the restoration out of the experience of illness.

We are bound by what we have learned as the meaning of disease. Often disease is represented metaphorically as "the enemy" to be defeated, "the demon" to be exorcised, "the evil" to be corrected. As a result, we are encumbered not only by the physical restrictions of the disease but by the emotional reactions we have to what we perceive is happening.

Writer Susan Sontag wrote in "Illness as Metaphor" that TB, cancer, and AIDS carry "the metaphoric trappings that deform the experience...they inhibit people from seeking treatment early enough, or from making a greater effort to get competent treatment."⁴

She also wrote, "Patients who are instructed that they have unwittingly caused their disease are also made to feel they have deserved it.... Widely believed psychological theories of disease assign to the luckless ill the ultimate responsibility both for falling ill and getting well."

She expanded this theme to include AIDS, a disease that portends such a dismal outcome that it has become the harbinger of personal and societal exile. We cannot, as thinking and feeling human beings, free ourselves of metaphors, particularly not in the changing, threatening face of AIDS.

Illness is also an exile from society as exemplified in the story of the Greek warrior Philoctetes. Now bear with me.

Philoctetes, as Sophocles described him, was a brave Greek warrior to whom the God Hercules bestowed his bow and arrow at the time of the Trojan War. Philoctetes was en route to rescue the beautiful Helen who was kidnapped by the Trojans. While resting on an island with his troops, Philoctetes was bitten by an enchanted serpent and he developed a chronic malodorous, purulent, nonhealing leg wound. His loud wailing and sour, foul smell assailed his companions so much that they abandoned him on the island of Lemnos where he lived in exile for 10 years. Needless to say, the man got very bitter and lamented, "Those ungodly men who left me here conceal their deal, and laugh, while my disease continues, flourishes, grows even greater."⁵

Fortunately it was prophesied in the oracles that in order for the Greeks to win over the Trojans,

Philoctetes must be restored to society. So the Greeks pleaded with him and Philoctetes agreed. The gods cured his leg and Helen and Troy were won over.

Why tell this tale? Because as Dr. Drew Leder pointed out, we as physicians, like the Greeks, bear some responsibility in restoring those in exile back into society in order to restore part of ourselves and the world we live in.³ This is, of course, hard to do.

How often do we shudder at the thought of seeing another alcoholic, or the belligerent IV drug abuser, HIV positive, with no IV access, for example?

We practice medicine with a delicate balance between repulsion and compassion. We are regularly frustrated by chronic illness, by medical noncompliance, by paperwork, by AIDS, by alcohol and drug dependence, by society demanding that we be infallible and accountable for every bad outcome.

Anton Chekhov, the great Russian writer, wrote in his dark short story "Ward Number Six", "Why can't man be immortal? Why does the brain have its centers and crannies? Wherefore vision, speech, self-awareness, genius, if all these things are doomed to go into the soil with the earth round the sun for millions of years, all for no reason? There were no reasons for calling forth man, with his lofty, almost divine intellect, out of nothingness, and then turning him into clay as if to mock him."⁵

Yet amidst all that may be discouraging, we remember certain patients who touch us with their humanity. Mr. Williams was such a person. He was 63 when he presented to the VA Hospital with the chief complaint of falling on his left side. He turned out to have a right temporoparietal tumor the size of a baseball—possibly glioblastoma multiforme. He was to be transferred to the VA in Charleston for neurosurgery the next day. He expressed his fears to me not of dying but of not being the same person after surgery. All I could do was listen; I had not much to say. Finally, he asked if he could pray with me. Not being particularly religious, I wanted to leave the room but he insisted, and this was after all a dying man's request. So I stayed. His prayer

sounded like this, "I thank you for my life. I thank you for my family. Look after them please and bless this child. (And, of course, he meant me.) Bless this child with kindness and courage." Kindness and courage—not knowledge, not skill—but kindness, and courage. These were the qualities he found to be most humanely important. What a fine gift.

Norman Cousins wrote about his healing experience as a patient with ankylosing spondylitis. His source of strength was laughter, what Sir William Osler called, "the music of life."⁷ Cousins spent hours watching Groucho Marx and reading comic books. He eventually wrote about the power of placebo and how intricately tied it was to the strength of patient-doctor relations. He wrote, "The doctor's attitudes toward the patient, his ability to convince the patient that he is not being taken lightly; his success in gaining the full confidence of the patient—all these are vital factors not just in maximizing the usefulness of a placebo but in the treatment of illness in general. In this sense, the doctor himself is the most powerful placebo of all."

Because we have so much to do, we often set aside our many other interests that would allow us to enhance our role as placebo. From talking with some of my co-residents, and even some of my attendings, there is a sense of having lost something. What is it that is truly vital to us? What is it that is truly ours? Is it that six-minute mile; is it that difficult riff on guitar; is it that evasive short story; is it that rare friendship we just can't seem to cultivate; is it the child's first few steps? We owe it to ourselves to retrieve part of what we may have lost. It is a stronger sense of self what will allow us to understand the importance of being doctors.

Dr. Albert Schweitzer said. "I ask knowledge what it can tell me of life. Knowledge replies that what it can tell me is little, yet immense. Whence this universe came, or whither it is bound, or happens to be at all, knowledge cannot tell me. Only this that the will to live is everywhere present as in me."

Anton Chekhov maintained an inspired creativity despite his poverty and rigorous medical training and career. His latest biographer, Henry

Troyat, wrote of Chekhov, " He believed in the possibility of social progress based on the will and the education of the individual. His medical studies only reinforced his faith in the edifying power of knowledge."⁸

I want my medical education not to impede my development as a person but to enhance it.

This duality of interests in writing and healing was quite a challenge for Chekhov. He wrote about the task of maintaining objectivity and yet trying to comprehend another person's suffering. In writing about the artist, he may as well have been writing about the doctor: "It is bad for the artist to take on something he doesn't understand. We have specialists for dealing with special questions. The artist must pass judgment only on what he understands!"⁸

He was not always an impartial witness. He was very much involved in caring for the sick in the midst of a typhus epidemic; he worked for many months in the cold Siberian penal colony called Sakhalin, interviewing thousands of criminal inmates; he would routinely see up to 40 patients a day.⁸

All his hard work prompted him to write, "You need equanimity in this world...only people with equanimity can see things clearly, be fair and work." Despite this, he found equanimity to be "...an even lethargic flame, it never flares nor roars...it is why I never do anything outstandingly stupid or notably intelligent."⁸

Contrary to this, Chekhov wrote in prolific fashion. At the age of 44, the flame was finally put out when he died of tuberculosis, the symptoms of which he had ignored for many years. He left a vast creative literary body of work.

Sir William Osler, in his valedictory address to physicians at the University of Pennsylvania, May 1, 1889, encouraged doctors to strive for the image of imperturbability and equanimity. He acknowledged that a certain degree of callousness was needed to sustain objectivity and effectiveness. This is, of course, challenged by the patient's need for compassion and understanding. He said, "From its very nature, this precious quality (imperturbability) is liable to be misinterpreted, and the general accusation of hardness, so often brought against the profession, has here

its foundation...keen sensibility is doubtless a virtue of high order, when it does not interfere with steadiness of hand or coolness of nerve... a callousness which thinks only of the good to be effected...is the preferable quality."¹

He also said, "The physician needs a clear head and a kind heart; his work is arduous and complex, requiring the exercise of the very highest faculties of the mind, while constantly appealing to the emotions and finer feelings."¹

In his address to the Academy of Medicine, New York, 1903, Sir Osler wrote, " The student starts in fact...as an observer of disordered machines...teach him how to observe, give him plenty of facts to observe, and the lessons will come out of the facts themselves...it is a safe rule to have no teaching without a patient for a text and the best teaching is that taught by the patient himself. The whole art of medicine is in observation...to educate the eye to see, the ear to hear, the finger to feel takes time."¹

I have often struggled with this idea of keeping this veneer of imperturbability and it is because I have not attained equanimity .

Like Jacob's struggle with the angel, I am constantly unsettling myself. I am, after all, a person first; constantly learning the responsibilities of being a competent doctor while trying to meet the demands of being a creative individual. I know these two need not be estranged. I thank you for sharing in this process and I leave you with this:

"Reverence for life...does not allow the scholar to live for his science alone, even if he is very useful to the community in so doing. It does not permit the artist to exist only for his art, even if he gives inspiration to many by its means. It refuses to let the businessman imagine that he fulfills all legitimate demands in the course of his business activities. It demands from all that they should sacrifice a portion of their own lives for others."

Albert Schweitzer⁹



REFERENCES

1. Osler, William. *Aequanimitas*. The Blakerton Company; Philadelphia, October, 1943.
2. Teaching Medicine as a Human Experience: A Patient-Doctor Relationship Course for Faculty and First Year

- Medical Students" by William T. Branch, M.D., et. al. *Annals of Internal Medicine*, Vol. 114, No.6, March 15, 1991, pp 482-489.
3. *Literature and Medicine, Volume 9 "Fictive Ills: Literary Perspectives on Wounds and Diseases."* Edited by Peter W. Graham and Elizabeth Sewell. Johns Hopkins University Press. Baltimore and London, 1990.
 4. Sontag, Susan. *Illness as Metaphor and AIDS as Metaphor*. Anchor Books-Doubleday. New York, 1977, 1988.
 5. Mandel, Oscar. *Philoctetes and the Fall of Troy*. University of Nebraska Press.
 6. Chekhov, Anton. "Ward Number Six," A Short Story from *The Oxford Chekhov, Volume VI, Stories 1892-1893*. Translated by Ronald Hingley. Oxford University Press. London, 1971.
 7. Cousins, Norman. *Anatomy of an Illness as Perceived by the Patient*. W.W. Norton and Company. New York, 1979.
 8. Troyat, Henry. Chekhov. Translated from the French by Michael Henry Heim. Fawcett-Columbine, New York, 1988.
 9. Anderson, Erica. *The World of Albert Schweitzer: A Book of Photographs*. Text and captions by Eugene Exman. Harper and Brothers.

DEDICATION

Dedicated to Dr. Donald E. Saunders, Jr. and Dr. Richard A. Hoppman.



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Editorials

Burnout, discussed elsewhere in this issue by Dr. Maria Baens, is a common phenomenon among physicians. In the following guest editorial, Dr. Donald Saunders not only reviews this phenomenon but also invites readers to respond to a questionnaire. Please note that the questionnaire is entirely anonymous. We need more data in this vital area! Guest editorials reflect the opinions of the authors and do not necessarily reflect the opinions of the officers and trustees of the South Carolina Medical Association.

— CSB

MEDICAL BURNOUT

Are we confronting an epidemic of professional dissatisfaction and unhappiness, better known as "burnout," among American physicians? A recent survey of Columbia physicians would suggest this is so. Apparently many physicians are having second thoughts about their career choice and are advising their children to enter other vocations. This situation has arisen in a setting of unprecedented financial success for medical practitioners.

Elsewhere in this issue Maria Baens¹ candidly describes the struggle of an internal medicine resident "for personal growth and personal healing in the process of becoming a physician." The feelings which she shares evoke personal reflections by physicians of all ages. Much about medical education and training and a career of medical practice submerges physicians in "human doing" rather than "human being." Typical medical practice is indeed a demanding mistress.

There is always an interplay between one's personality, or psychological make-up, and the environment. Compulsiveness is a major character trait among physicians.² Although patients are well served by a compulsive physician, the dark side of compulsiveness evokes doubt, guilt feelings and an exaggerated sense of responsibility. The result can be guilt feelings about relaxing and pursuing pleasure, problems allocating time to family, inappropriate sense of responsibility for things beyond one's control, difficulty setting limits and confusion of healthy self-interest with selfishness. Control is a dominant issue and

denial of vulnerability serves control.

Compulsive, controlling behavior is enhanced by competition for admission to medical school, the extraordinary academic demands of medical school, and time pressures and patient responsibilities during residency training. Residents are constantly beset with sleep deprivation, paper work, scheduling chores, and the responsibility of rushing patients in and out of hospitals. It is not surprising that as many as one third of residents experience loneliness, depression, disrupted marriage, alcohol or drug abuse, or suicidal thoughts.³

The years of insatiable demand during medical school and residency training occur at the critical stage of human development which Erik Erikson⁴ has termed Young Adulthood. Each of Erikson's eight psychosocial developmental stages is featured by a crisis between a positive character trait, at this stage *intimacy*, and a negative trait, here *isolation*. Intimacy refers not only to sexual intimacy—at this time of life when marriage often occurs—but also to a mutuality of feeling between individuals, the ability to share one's self with others. A positive developmental outcome of intimacy over isolation during young adult years results in the basic lasting strength of *love* with attendant partnerships in friendship, sex, competition and cooperation. A negative outcome results in isolation, withdrawal, loneliness and exclusivity.

After training, the medical practitioner must deal with uncertainty, fear of error, expectations

for perfect results, suffering, death, and problem patients who evoke anger and avoidance.⁵ Long term doctor-patient relationships, which are often trusting friendships, have become rare in an era of specialty medical care utilizing technology, group practice, contractual plans which restrict physician access and a mobile population. Increasingly physicians care for strangers whom they rarely if ever see again.

The negative personal effects of modern medical practice on physicians include unhappy marriages,⁶ alcohol or drug abuse and suicide. Although women physicians suffer much less addiction than male physicians,⁷ the suicide rate among women physicians is four times that of the general population while male physicians have rates similar to their non-medical counterparts.⁸

A recent study⁹ identified external pressures of particular concern to unhappy, dissatisfied physicians. These include loss of control over medical decisions and the referral process, threat of malpractice suits, ethical issues facing health maintenance organization physicians and reduction in income. Happiness and satisfaction was attributed more to attitudinal adjustments than to success in the "business of medicine." A survey of 1,000 oncologists showed that 56 percent of respondents experienced burnout in their professional life.¹⁰ Insufficient personal and/or vacation time was cited as the most frequent reason.

Based on assumptions that the stressful environment of modern medicine will not go away and may not diminish, that medicine can be a wonderful profession and that we physicians can benefit from nurture, healing and support like everyone else, a workshop on "Professional Satisfaction and Happiness for Physicians" is planned for March 5-7, 1993 at St. Christopher Conference Center on Seabrook Island. The fac-

ulty will include two storm-tossed survivors of over 30 years of medical practice, Richard Sosnowski and myself, clinical psychologist Bruce Schell who has much experience in small group work, and financial planner Myra Salzer who has created innovative seminars for those troubled by money matters. You can help us prepare for this experience by filling in and mailing the accompanying form. Or better yet, you can join us by participating in the workshop aimed at producing happy docs.

Donald E. Saunders, Jr., M.D.

USC School of Medicine

3555 Harden Street Extension, #100
Columbia, SC 29203

REFERENCES

1. Baens M. Medicine, illness, and creativity. *J SC Med Assoc* 88: No. 6, 1992.
2. Gabbard GO. The role of compulsiveness in the normal physician. *JAMA* 224:2926-2929, 1985.
3. McCue JD. The distress of internship. *N Engl J Med* 312:449-452, 1985.
4. Erikson, E. *Identity: Youth and crisis*. WW Norton New York, London 1968 p 136.
5. McCue JD. The effects of stress on physicians and their medical practice. *N Engl J Med* 306:458-463, 1982.
6. Gabbard GO, Menninger RW, Coyne L. Sources of conflict in medical marriage. *Am J Psychiatry* 144:567-572, 1987.
7. Bissell L, Skorina JK. One hundred alcoholic women in medicine: An interview study. *JAMA* 257:2939-2944, 1987.
8. AMA Council on Scientific Affairs. Results and implications of the AMA-APA physician mortality report. *JAMA* 257:2949-2953, 1987.
9. Reames HJ Jr, Dunstone DC. Professional satisfaction of physicians. *Arch Intern Med* 149:1951-1956, 1989.
10. Whipple DA, Canellos GP. Burnout syndrome in the practice of oncology: Results of a random survey of 1,000 oncologists. *J Clin Oncol* 9:1916-1920, 1991.

(Questionnaire on next page)

PROFESSIONAL SATISFACTION AND HAPPINESS FOR PHYSICIANS SURVEY

- | | <u>Yes</u> | <u>No</u> | <u>No
opinion</u> |
|--|------------|-----------|-----------------------|
| 1. Do you perceive a loss of control to external forces such as government regulations, unrealistic expectations, etc? | () | () | () |
| 2. Does your financial security feel threatened? | () | () | () |
| 3. Does the malpractice suit threat significantly affect your everyday professional life? | () | () | () |
| 4. Are the long hours of a devoted physician adversely affecting your family relationships or causing chronic fatigue? | () | () | () |
| 5. Are you satisfied that your personal health and welfare are being optimized? | () | () | () |
| 6. Have you developed doubts about the wisdom of your choice of a medical career? | () | () | () |
| 7. Would you be likely to attend a program designed to promote understanding, insights and improvement in professional satisfaction and happiness? | () | () | () |
| 8. Would you be willing to pay your share of the cost of such a program? | () | () | () |
| 9. Do you believe that your local medical society or specialty organization would sponsor such a program? | () | () | () |
| 10. Additional Comments: _____ | | | |
| 11. <u>Respondent data</u> : Age () Years out of training ()
Practice type: Generalist () Specialist ()
: Medicine () Surgery () Other () | | | |

Return to: Dr. Donald E. Saunders, Jr.
SCMA Continuing Medical Education Committee
Post Office Box 11188
Columbia, SC 29211

Edward J. Dennis, III, M. D., was widely and fondly known as "Billy" throughout South Carolina and indeed the Southeast. He enjoyed a national reputation in gynecologic oncology. He spent his career at our state's medical schools and his leisure time—to the greatest extent possible—at his ancestral home in Moncks Corner. A memorial fund for cancer research has been started in his name; contributions can be sent to the Edward J. Dennis Cancer Research Fund, Richland Memorial Hospital Foundation, 5 Richland Medical Park, Columbia, SC 29203. The following guest editorial was written by one of Dr. Dennis' sons. Guest editorials reflect the opinions of the authors and do not necessarily reflect the opinions of the officers and trustees of the South Carolina Medical Association.

— CSB

EDWARD J. DENNIS, III, M. D. (A SON'S MEMORIES OF "BILLY")

For unto whomsoever much is given, of him shall be much required: and to whom men have committed much, of him they will ask the more.

Luke 12:48

In the days since the death of my father on January 28, 1992, this biblical passage, so often quoted by him, has come to mind frequently. He recited this same passage in reference to his mother during his Presidential Address to the South Atlantic Association of Obstetricians and Gynecologists in 1978, and also during the course of many of our private conversations, to challenge and to evoke an individual response.

Similarly, in each instance, he sought to resurrect a sense of obligation within the audience to recognize the responsibility and requirements that are inherently a part of our profession. Again, I quote from that same Presidential Address, in a reference to his father who represented a "degree of dedication, courage, and commitment to those things in life that are important not only to one's self but those for whom he had contributed his entire emotional, physical, and intellectual attributes." This, I believe, was the embodiment of his approach to medical education and to life as well. He considered each person to have a charge in life, and the opportunity to fulfill that charge demanded a total commitment, both physical and intellectual. His charge in life was the delivery of quality health care to all those in need. As an educator, he sought to fulfill that charge through the provision



Edward J. Dennis, III, M. D.

of quality education to many of the physicians who practice in this state, whatever the specialty, but particularly Obstetrics and Gynecology. In his closing remarks of that same address in 1978, he concluded that we, as physicians, must "make a concentrated effort both individually and collectively as a carefully structured and vigorously oriented group to provide health care to all human beings. If you do not, then I submit that our future will be 'O death where is thy sting, O grave where is thy victory.'"

My father was a passionate man, known by friends and colleagues for his love of his country retreat on the Cooper River in Moncks Corner. There, he would give counsel, provide sup-

port, and offer encouragement to all who chose to listen. All who were fortunate to spend time in discourse along the river have their own unique remembrance as to how his influence somehow altered the direction of their life. Even those who were not so fortunate—patients, colleagues, and friends—have approached me since his death with their own special, unique remembrance of his personality and character. We should not forget those moments, but rather look beyond to the "total picture" that he sought to convey. For this was his legacy, to instill in each of us a sense of commitment to our charge to be pursued with integrity, intellect, and passion.

He was a sentimental but not an emotional man. Rather than praise and accolades in recognition of his contributions and achievements, he chose to ensure that his legacy would endure. Pursuant to his wishes, near the time of his death, he requested that a fund be established in his name to the advancement of research efforts against the disease that challenged him throughout his life and eventually claimed the same.

It remains our charge, collectively as physicians who serve the people of South Carolina, to maintain quality in the delivery of health care. In closing, I would again like to use a quote from his Presidential Address that was attributed to

William B. Bean, M.D., in the Allen Gregg Memorial Lecture to the American Association of Medical Colleges in 1978.

"In every opportunity for taking action in life, I should ask a question, 'What must I do?' The question can be answered, almost always, on the spot, or after a few moments of intense reflection. The next question may outline the work for an hour, a day, a decade, or a lifetime. 'What is the best and wisest way to do what is right?' In our profession of medicine, the central and essential feature is the patient-physician relationship. In this relationship, the physician's action should always be decided by determining 'for whose benefit?' If it is for the patient, it is good. If for the doctor, it may not be. It is as simple as that.

The failure to follow these rules is the source of many problems facing physicians today. If we follow the rules, many of our troubles will diminish and some will vanish. And we will see a better future."

William A. Dennis, M.D.
2 Richland Medical Park
Suite 208
Columbia, SC 29203

On the Cover:

FIFTY YEARS AGO

1942—MacArthur leaves Philippines vowing to return—Doolittle leads raid on Tokyo—Coffee, sugar and gas rationing begins—Navy wins battle at Midway—Montgomery shatters Rommel's troops at El Alamein—492 die in Coconut Grove fire in Boston—Lights of New York dimmed—Sales of women's trousers five to 10 times greater than last year—Mickey Rooney romances Ava Gardner—A Japanese sub fires 25 shells at a California oil refinery, the first attack on the American Mainland.

Best movie of the year: "Mrs. Miniver"—Other popular movies: "Casablanca," "Pride of the Yankees," "Random Harvest," "Yankee Doodle Dandy"—Top Records: "Don't Sit Under the Apple Tree," "White Christmas," "Don't Get Around Much Anymore," "Praise the Lord and Pass the Ammunition," "When the Lights go on Again."

The Kenny Method of Treatment for Infantile Paralysis" published—First preparation for simultaneous immunization against diphtheria and whooping cough available—Demerol devel-

oped by Winthrop Laboratories—Average per-capita income in South Carolina, \$300; 1.8 hospital beds per 1,000 population in South Carolina—Compulsory "enriching" of flour and bread will effectively eliminate Pellagra in South Carolina—Dr. and Mrs. Leon S. Bryan are receiving congratulations on the birth of their son, January 15, at Providence Hospital.

Medical College of the State of South Carolina begins accelerated program with a class of 50 freshmen entering on June 25—Dr. Robert Wilson, Dean, sends out an plea for microscopes for new students unable to purchase because of war restrictions—Blood Plasma Banks to be established in four state institutions—Medical College of the State of South Carolina graduates 43—Of the 43 graduates, 38 were from South Carolina and at least 19 remained in the state to practice. There were no women in the class of 1942.

Betty Newsom
The Waring Historical Library



"I have never gotten used to people dying. And I don't want to get used to it."

Dr. Aliza Lifshitz, Internist, Los Angeles, California, Member, American Medical Association

Patients come to physicians for many reasons. Beyond relief from pain, they seek compassion, empathy and support. AIDS patients receive all of these and more from Dr. Aliza Lifshitz.

Born and raised in Mexico and educated at one of Mexico City's finest medical schools, Dr. Lifshitz now serves the Hispanic community in Southern California. Over a third of her patients have tested HIV positive. Most live below the poverty level. Many are illegal aliens.

"I never forget what it means to be a doctor, and what it means is embodied in the Principles of Medical

Ethics of the American Medical Association (AMA)," states Dr. Lifshitz.

You are invited to join Dr. Lifshitz and to join with her in her efforts to bring quality health care to those in need. Become a member of the American Medical Association today.

Members of the AMA are encouraged to join their state, county and specialty societies.

American Medical Association

Physicians dedicated to the health of America





President's Page

HELPING TO TELL OUR SIDE

Let the silent majority speak out. Let us tell our side. We, physicians, have heard and seen enough in the newspapers and on TV. The 30-second sound bite does not educate and inform; it sensationalizes and distorts the facts.

Following are some accurate facts you may wish to share with your colleagues and community friends:

1. Physician net income, after expenses, comprises 13 percent of overall healthcare expenditures.
2. These days, physicians are working an average of 60 hours per week. This means 100 more hours per year than they worked in the early 1980s.
3. Average office expenses in 1983 amounted to \$85,400; today, a physician averages over \$150,000 in office expenses.
4. The price of medical supplies alone has doubled since 1982.
5. In many areas of this country, the price of malpractice insurance has more than doubled since 1983.
6. Of the 1990 medical graduates, 79 percent incurred an average debt of \$46,200.
7. During the period of 1980-1989, the rate of price increase in physician services was 7.8 percent; for prescription drugs, 9.6 percent; and hospital rooms, 9.8 percent. Overall, the rates of price increases for physician services have been very similar to the general inflation rate in medical care prices.
8. In 1989, physicians provided a total of 6.6 **BILLION** dollars of free and reduced fee care.
9. In 1988, 62 percent of physicians provided charity care. This increased to 66 percent in 1989.
10. Physicians provide 6.2 hours per week in free and reduced fee care.

Our healthcare system is definitely in need of reform. We need to focus on finding ways to increase access to everyone in America. We also need to emphasize what we are presently doing. We still provide the best medical care in the entire world.

A handwritten signature in cursive script, reading "Bartolo M. Barone, M.D.".

Bartolo M. Barone, M. D.
President

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EDITOR

Charles S. Bryan, M.D.
SCMA, P.O. Box 11188
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CYSTIC FIBROSIS: A DISEASE CAUSED BY A SINGLE DEFECT IN SALT-TRANSPORTING EPITHELIAL CELLS*

JAMES C. WILLIAMS, JR., Ph.D.**

Cystic fibrosis, sometimes called mucoviscidosis, is an autosomal recessive disease of the exocrine glands.^{1,4} Affected individuals display mild-to-severe mucoid blockage of pancreatic ducts that results in the dilated (cystic) ducts and atrophied (fibrous) acinar tissue that give the disease its name. Other systems affected include the liver, salivary glands, eccrine sweat glands, reproductive ducts, and lungs. Lung disease is seen in almost every case, and airway obstruction and infection are responsible for more than 90 percent of deaths due to cystic fibrosis.

The disease has an incidence in the American white population of about one in 2,000 births, indicating that almost one in 20 whites are symptomless carriers of the trait. It is rare in persons of Asian or African ancestry. The disease is now most commonly diagnosed in infancy following initial observation of abnormally salty sweat. The inability to produce normally diluted sweat is a common, if rather inconsequential, symptom of the disease.

It is this inability to produce normally diluted sweat that provided an early clue to the nature of the disease.⁵ It is not surprising that cystic fibrosis was initially viewed as a disorder of mucus secretion, as the mucous blockage of the airways and pancreas are its most obvious features seen upon autopsy, but this explanation does not help to understand the defect in the sweat glands, which produce no mucus. It was the study of sweat glands from the skin of affected individuals that first pointed to a problem with transport of salt across epithelial cell layers. These studies, backed by decades of basic research into the nature of ion transport, led to our present view of the disease as one of defective transport of chloride across cell membranes. Recent identification of the gene that is defective in cystic fibrosis has added confirmation to this view,⁶⁻⁸ and promises the development of new pharmaceutical treatments for this disease, as well as the potential for gene therapy. It is the purpose of this article to describe what is now known about the basic defect of cystic fibrosis. Just as the research into this defect drew on knowledge of the way ions are transported across cell layers, so must we start with a brief review of epithelial ion transport.

*This is the first of four articles dealing with recent advances in our basic understanding of disease.

**Department of Anatomy, Indiana University School of Medicine, 635 Barnhill Drive, Indianapolis, IN 46202-5120.

SALT TRANSPORT ACROSS EPITHELIA.

Many functions of the body depend on the transport of salt from one compartment to another by the cells in between. One example of this is the action of the cells of the small intestine to absorb sodium chloride and other solutes from the chyme and transport them into the blood. This process leaves the luminal contents slightly dilute, and thus water also flows across the permeable epithelium into the blood; the intestine thereby accomplishes absorption of fluid (water and solute) from the digesting foodstuffs. Like many areas of biology, the first rational explanation for this sort of transport came in studies with non-mammals, such as the frog.⁹

The frog possesses the remarkable ability to take up, across its skin, salt from pond water. Because the frog's blood is a great deal saltier than pond water, leakage of salt from its body to the water is a constant problem, so the ability to recover this salt is essential; but its mechanism was completely unknown until about forty years ago. At that time, Hans Ussing and coworkers developed a method for removing the skin of frogs and mounting it in a chamber so that the skin separated two compartments of fluid.¹⁰ They could then study the movement of radioisotopic salt from one compartment to another, and correlate this movement with electrical studies and with the effects of applied hormones and drugs.

Their studies produced the model shown in Figure 1, which stands today as the basic model for transport of an ion across a cell layer. In this figure, the epithelial cell is depicted schematically, with one membrane (the apical membrane, which in the frog is bathed by pond water) facing the luminal compartment and the other (the basolateral membrane) facing the blood. The driving forces for the ion transport are "pumps" in the basolateral membrane that use energy (ATP) to transport the ion from the cell interior to the blood side. By removing the ion from the cell interior, a gradient is established such

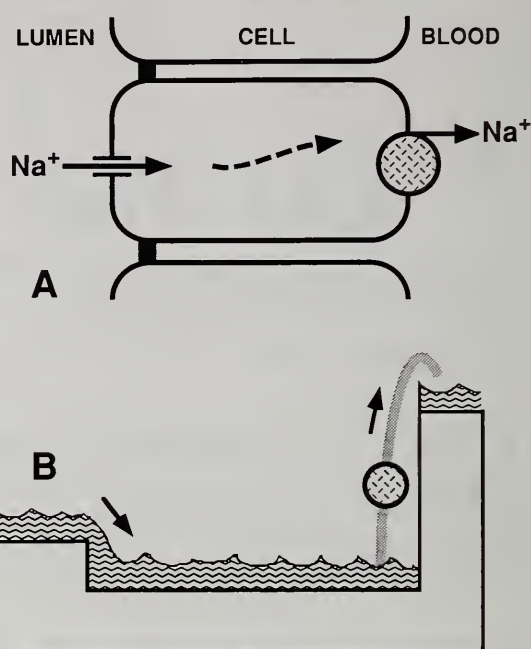


Figure 1. Classic model for active sodium transport. A. Cells are shown connected into an epithelial sheet by tight junctions (dark bars). The sheet of cells separates the luminal compartment from the serosal (blood) side. The action of a sodium "pump" removes sodium from the cell interior and transports it to the blood side, leaving the activity for sodium in the cell lower than in the luminal compartment. Sodium then can diffuse from the luminal side into the cell through sodium-specific channels. By separating the two transporters (the pump and the channel) to opposite sides of the cell, directional transport of sodium is accomplished. B. The energetics of the process shown in A are displayed by analogy to the pumping of water out of a marsh to higher ground. The cell in this analogy is a sump, the water level in which is maintained lower than the marsh (to the left) by action of the pump (on the right.)

that the ion in the luminal compartment can diffuse into the cell if pathways ("ion channels") exist in the apical membrane. The flow of the ion from luminal compartment to cell interior is energetically "downhill" as illustrated with the water analogy shown in Figure 1B. The extrusion of the ion from cell interior to blood side is energy requiring. Thus, by having appropriate pumps and leaks separated to opposite membranes of the epithelial cell, directional transport of the ion across the cell layer is accomplished.

A more complete version of the model for Na^+ transport is shown in Figure 2. Here we see the primary pump for ion transport in

epithelia: the ouabain-sensitive Na^+, K^+ -ATPase. This enzyme is located in the basolateral membrane of all the cells we will discuss here. It catalyzes the cleavage of ATP into ADP and phosphate, and utilizes the energy from this reaction to transport sodium out of the cell and potassium in, each against substantial gradients. The sodium concentration in the cell is thereby maintained at a low value, and the potassium high. This model differs from that in Figure 1 only by the addition of potassium to the system, which recycles across the basolateral membrane via its own channels.

By adding other transporters to the cell, either on one membrane or the other, transport across the cell of a variety of ions and other molecules can be accomplished. For example, Figure 3 shows the general system used by many epithelia to accomplish secretion of fluid (secretion of salt with water following).¹¹ Key to its activity is again the Na^+, K^+ -ATPase, but some new transporters are added. The $\text{Na}^+, \text{K}^+, 2\text{Cl}^-$ transporter [blocked by furosemide (Lasix)] mediates the coordinated entry into the cell of three different ions, and this entry is driven mainly by the sodium gradient set up by the pump. Chloride builds up in the cell to a great enough concentration that it will flow out through Cl^- -specific channels in the apical membrane. The addition of Cl^- to the lumen

makes it electrically negative relative to the blood, and sodium flows between the cells following this charge difference. The net effect is secretion of salt, and, if the epithelium is permeable to water, water follows osmotically.

This sort of fluid secretion mechanism was first found in tissues such as the salt-excreting rectal gland of the shark, but the same cellular system was later found to operate in mammalian tissues such as the respiratory epithelium. In the lung, this fluid secretion is important for providing a thin layer of fluid within which the cilia of the epithelium beat. If this fluid layer is not thick enough (that is, fluid secretion is insufficient) mucus will stick to the cilia and not be moved out of the lungs at the normal rate. We will see later that it is just such a defect in fluid secretion that leads to some of the respiratory symptoms of cystic fibrosis.

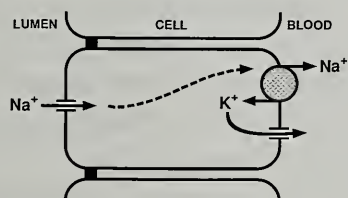


Figure 2. The sodium, potassium-ATPase is the primary "pump" for driving salt transport in epithelial cells. It is shown here in a cell configuration that would absorb sodium from the luminal compartment. Not shown is the conversion of ATP to ADP on the cytoplasmic side of the pump; this is the reaction that provides the energy for ion transport.

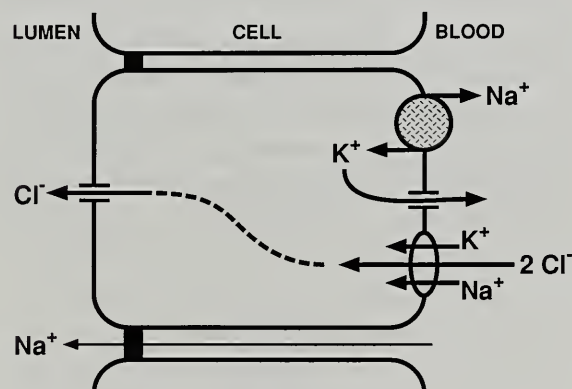


Figure 3. Arrangement of transporters common to epithelia involved in secreting fluid. Chloride is driven into the cell from the blood side by the action of a transporter that carries one Na^+ , one K^+ , and two Cl^- into the cell simultaneously. (The transporter is the same as that in the kidney that is affected by the diuretic Lasix, although it is here located on the blood side of the cell, while in the kidney it is located on the luminal side for salt absorption.) A chloride-specific channel lets chloride leak out of the cell to the luminal side. The transport of the chloride anion to the luminal side makes the side electrically more negative than the blood side, and sodium is drawn between the cells into the luminal compartment by this charge difference.

EPITHELIA IN CYSTIC FIBROSIS

What was discovered in the sweat ducts of persons with cystic fibrosis that first suggested that the defect in the disease was related to a chloride channel? Figure 4 shows a schematic of the sweat gland to point out that sweat is formed in the blind end of the gland, and is diluted as it flows through the duct to the surface of the skin. Dilution of sweat is accomplished by absorption of NaCl from the lumen of the duct. The cells of the sweat duct are relatively impermeable to water flow, so removal of salt from the sweat makes it more dilute. A model of the mechanism of salt absorption in this duct is shown in Figure 5. Note that the model is very much like that of Figure 2, but with channels for chloride added to both membranes. Because cystic fibrosis is associated with salty sweat, this mechanism was thought to be defective in some way. Using sweat ducts isolated from human skin and perfused for study, Quinton found that normal sweat ducts produced a small voltage between the lumen and the blood side, with the lumen being slightly electronegative to the blood side.¹² In ducts from skin of persons with cystic fibrosis, the voltage was much greater. When normal

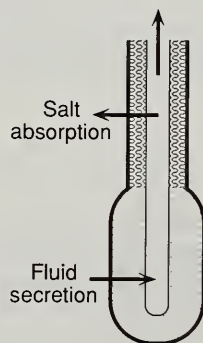


Figure 4. Stylized view of the eccrine sweat gland. The coiled portion of the gland deep in the skin secretes a fluid that contains about the same concentration of salt as does plasma. As this fluid flows through the duct towards the surface of the skin, salt is absorbed without water being allowed to follow, and the production of a dilute sweat is achieved.

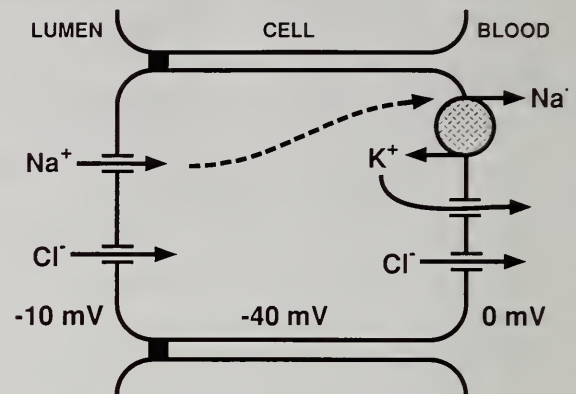


Figure 5. Model of the salt-absorbing mechanism in the human sweat duct. The mechanism for sodium absorption is that shown in Figure 2, but the addition of chloride channels allows NaCl to be absorbed. The voltages shown are those typical for this epithelium, with the interior of the cell being electronegative to the blood and the lumen (after Reddy & Quinton¹²).

ducts were perfused with a solution without chloride, they also developed a high voltage. When cystic fibrosis ducts were perfused with low chloride, there was no further increase in the already increased voltage. These and other experiments pointed to the difference in cystic fibrosis ducts being due to an absence of functional chloride channels (Figure 6). Whether the channel proteins were absent, or present and simply not open, could not be determined at that time.

Similar defects in membrane chloride permeability were subsequently seen in other tissues, such as nasal and tracheal cells, and workers in the field became convinced that a defective chloride channel was the principal cause of cystic fibrosis. Many of the respiratory symptoms could be explained by blockage of fluid secretion in the lung epithelium, and the pancreatic deficiency could be explained by a similar blockage of fluid secretion in that organ. However, finding the specific defective protein that led to the reduced chloride permeability was another matter. First, much of the data argued that the defect was in regulation of the channel, not in the channel itself. For example, in some cystic fibrosis tissues, fluid secretion in response

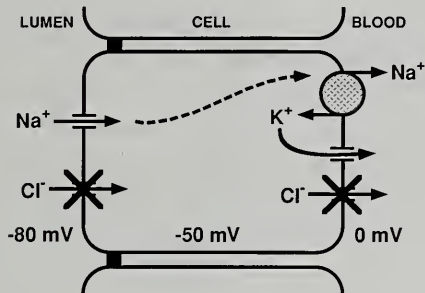


Figure 6. Postulated condition of the sweat duct cells in cystic fibrosis. Chloride channels are not open, so no absorption of salt occurs. The removal of some sodium from the lumen leaves it substantially electronegative to both the cell and the blood. It is this electrical profile that is seen in the sweat ducts in cystic fibrosis.

to β -adrenergic stimulation was low, but secretion in response to cholinergic stimulation was normal. If the same chloride channel was operating during both β -adrenergic- and cholinergic-stimulated secretion, then its regulation (that is, the control of its opening and closing) must be defective, and that defect could be in the channel itself or in an unknown protein.

Identifying and isolating a single ion channel is a difficult task. Some proteins, such as enzymes, can be chemically identified during their isolation, but ion channels function only in a membrane; when isolated they are not easily distinguished from other proteins. If the defective gene in cystic fibrosis could be identified, then things could move forward, and it could be determined if the protein encoded by the gene was the chloride channel or some other protein.

CF GENE

Genetic linkage studies localized the cystic fibrosis gene to a specific site on chromosome seven, but a great deal of work was required to find the gene itself, a feat that was accomplished in 1989.⁶⁻⁸ Identity of the gene was first approached by showing that messenger RNA from the gene was present in high

concentrations in tissues affected by cystic fibrosis. Finally, complete sequencing of the DNA identified the specific mutations found in individuals afflicted with cystic fibrosis.

The protein encoded by the cystic fibrosis gene is composed of 1480 amino acids (a large protein), and the sequence of the amino acids is such that 12 regions have concentrations of amino acids that are not very soluble in water (hydrophobic domains). It is proposed that these 12 regions are segments of the protein that pass through the lipid bilayer of the cell membrane; that is, it appears to be a membrane protein with twelve transmembrane segments. Such a protein could be a chloride channel, but it also could be a regulatory protein. Because its function is ill defined, it has been called the Cystic Fibrosis Transmembrane conductance Regulator, or CFTR.

Most individuals with cystic fibrosis (70 percent) are missing the same three consecutive nucleotides in both copies of their DNA coding CFTR. These nucleotides together code for the presence of phenylalanine (F) at amino acid number 508 along the sequence of CFTR, and the mutation is called $\Delta F508$. Mutant CFTR produced by the $\Delta F508$ gene is predicted to be missing an amino acid in a region of the protein that is probably involved in binding an energy molecule like ATP. More than 100 other mutations of CFTR have been found in individuals with cystic fibrosis, with most affected individuals having one copy of $\Delta F508$ and one of the other mutations.

Carriers of cystic fibrosis, most of whom carry the $\Delta F508$ gene along with one copy of the normal gene for CFTR, show no cystic fibrosis symptoms. Individuals homozygous for $\Delta F508$ display the classic clinical picture of cystic fibrosis. Individuals with the $\Delta F508$ gene along with another mutated form of the CFTR gene may display milder symptoms of the disease. Thus, the variety in the severity of symptoms associated with cystic fibrosis can be explained by the expression of different combination mutations of the gene pre-

sent in the population.

EXPRESSION OF CFTR

The protein encoded by the cystic fibrosis gene can now be studied directly, and work is progressing to show whether or not this protein is the chloride channel that malfunctions in cystic fibrosis. As an example of the research in this area, let us look at some results obtained examining expression of CFTR in single cells in culture. Because the DNA coding for CFTR is known, it is possible to cause cells to manufacture CFTR, even if they would never manufacture this protein on their own. Normally, the cell produces a protein through the following series of steps: In the nucleus, DNA coding for the protein is transcribed into messenger RNA, which then moves out into the cytoplasm. In the cytoplasm, the messenger RNA is used by ribosomes as a coding strand to construct the protein; for every three nucleotides in the messenger RNA, one amino acid is added to the growing protein. For a membrane protein like CFTR, the growing protein will be inserted into intracellular membrane as it is formed. Eventually, the membrane containing the completed CFTR will be fused with the plasma membrane and CFTR will then be ready to function on the surface of the cell.

For many proteins, this entire process is automatic after the appearance of the messenger RNA in the cytoplasm. Thus, if messenger RNA for CFTR is injected into a cell, the cell will probably make CFTR and express it on the cell surface (Figure 7). This has been done with frog oocytes, and in at least four different cultured cell lines (Chinese hamster ovary cells, the Sf-9 insect cell line, HeLa cells, and fibroblasts).⁴ All of these cells normally possess a low permeability to chloride (no Cl^- channels). In all cases, when the cells were injected with RNA coding for CFTR, the cells displayed chloride channels. It is possible that CFTR could have activated quiescent channels in these cells, but the appearance of chloride channels in such diverse cells following expression of CFTR provides

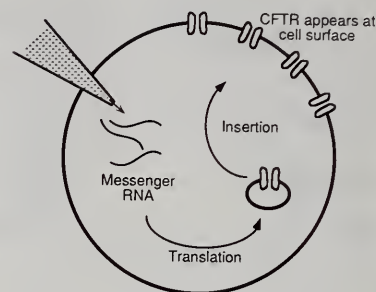


Figure 7. Expression of the protein product of the cystic fibrosis gene (CFTR) in a cell. Messenger RNA prepared from complementary DNA is injected into the cell using a very fine glass pipet. The messenger RNA is used by the ribosomal machinery in the cell to produce CFTR (shown here as if it were a channel) inserted into membrane. The membrane is then fused with the cell membrane. In studies with several different types of cells, injection of CFTR messenger RNA in this way leads to the appearance of chloride channels in the cell membrane several days later. The presence of chloride channels is detected by inserting another pipet and measuring electrical current across the membrane in response to imposed voltages.

circumstantial evidence that CFTR itself acts as a chloride channel.

Messenger RNA expression of CFTR in oocytes has also been used to study mutant CFTR, such as ΔF508 . Drumm et al. injected oocytes with messenger RNA coding for normal and mutant CFTR.¹³ Expression of mutant CFTR resulted in fewer open chloride channels (lower conductance) than did expression of normal CFTR. But, if pharmacological agents were present to stimulate channel activity (forskolin and isobutylmethylxanthine), the channel activity of the oocytes expressing the mutant CFTR was significantly increased. This work raises the possibility that pharmacological agents could be developed to stimulate activity of mutant CFTR.

CF AND CFTR

Eventually, pure CFTR protein will be incorporated into artificial lipid bilayers, so that its function can be studied in the absence of

unknown proteins. If it acts as a chloride channel under these conditions, its identity as a channel will be confirmed. If not, further work will eventually identify its function. In any case, we are assured that new treatments based on the work with CFTR are forthcoming. The work of Drumm et al. suggests that new pharmaceuticals could be developed to activate the sluggish chloride channels in cystic fibrosis. Work is also progressing toward adding back the normal CFTR gene to cystic fibrosis cells; Rosenfeld et al. have successfully introduced the CFTR gene into the lung epithelium of rats using a virus to carry the gene into the cells.¹⁴ There are many problems to be overcome with this method, but it raises the possibility that normal CFTR genes could be introduced into the lungs of cystic fibrosis patients by aspiration therapy.

Everyone expects that therapies such as these eventually will be successful. An overwhelming amount of evidence suggests that the primary defect in cystic fibrosis is that of a deficiency in chloride channel activity in many types of epithelial cells, and because the trait is due to a single gene, it seems likely that amelioration of the chloride channel defect in affected individuals will eliminate the symptoms of the disease. However, there are aspects of the disease that are not easily accounted for by a lack of chloride channel activity.⁴ In respiratory epithelium, cystic fibrosis leads not only to a decrease in fluid secretion, but also to an increase in fluid absorption, producing a drier airway than would be achieved by inhibiting secretion alone. Additionally, the mucus secreted in the airways in cystic fibrosis is of abnormal composition, and it is not obvious how this can be explained by a defective chloride conductance. Much of our understanding of these aspects of the disease may come only as patients are treated with new methods and the results are observed.

CONCLUSION.

The story of how we have come to our pre-

sent understanding of cystic fibrosis clearly points out the dependence of health-related research on work done in basic science. If the years of study on epithelial salt transport had not been in place, studies of human sweat ducts would have taken many more years to arrive at the conclusion that a defect in chloride permeability existed. It was the intellectual groundwork of hundreds of scientists, working for decades on systems as esoteric as the turtle bladder and duck red cells, that enabled rapid progress to be made in understanding the nature of the defect. Similarly, if the basic epithelial work was not done, identification of the defective gene would be less useful. How could one know if artificially expressed CFTR is operating in a cell if one had no clue as to its normal function? Indeed, the ability to observe ion permeability in cells, as discussed above, is entirely due to basic studies on systems as diverse as squid axons and fish gills.

Work in cystic fibrosis will continue to bring together physicians, epithelial physiologists, and molecular biologists for work towards a cure for this disease. As rapidly as research has been progressing of late, new treatments for this disease should be just around the corner. □

ACKNOWLEDGEMENT

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REFERENCES

1. Quinton PM: Defective epithelial ion transport in cystic fibrosis. *Clin Chem* 35:726-730, 1989.
2. Quinton PM: Cystic fibrosis: A disease in electrolyte transport. *FASEB J* 4:2709-2717, 1990.
3. Welsh MJ: Abnormal regulation of ion channels in cystic fibrosis epithelia. *FASEB J* 4:2718-2725, 1990.
4. Widdicombe JH, Wine JJ: The basic defect in cystic fibrosis. *Trends Biochem Sci* 16:474-477, 1991.
5. Quinton PM: Chloride impermeability in cystic fibrosis. *Nature* 301:421-422, 1983.
6. Rommens JM, Iannuzzi MC, Kerem B, et al: Identification of the cystic fibrosis gene: Chromosome walking and jumping. *Science* 245:1059-1065,

- 1989.
7. Riordan JR, Rommens JM, Kerem B, et al: Identification of the cystic fibrosis gene: Cloning and characterization of complementary DNA. *Science* 245:1066-1073, 1989.
 8. Kerem B, Rommens JM, Buchanan JA, et al: Identification of the cystic fibrosis gene: Genetic analysis. *Science* 245:1073-1080, 1989.
 9. Ussing HH: Life with tracers. *Annu Rev Physiol* 42:1-16, 1980.
 10. Ussing HH, Zerahn K: Active transport of sodium as the source of electric current in the short-circuited isolated frog skin. *Acta Physiol Scand* 23:110-127, 1951.
 11. Schultz, S. G. 1987. Cellular models of epithelial ion transport. In *Membrane Transport Processes in Organized Systems*. T.E. Andreoli, J.F. Hoffman, D.D. Fanestil, and S.G. Schultz, editors. Plenum, New York. 135-150.
 12. Reddy MM, Quinton PM: Altered electrical potential profile of human reabsorptive sweat duct cells in cystic fibrosis. *Am J Physiol* 257:C722-C726, 1989.
 13. Drumm ML, Wilkinson DJ, Smit LS, et al: Chloride conductance expressed by deltaF508 and other mutant CFTRs in *Xenopus* oocytes. *Science* 254:1797-1799, 1991.
 14. Rosenfeld MA, Yoshimura K, Trapnell BC, et al: In vivo transfer of the human cystic fibrosis transmembrane conductance regulator gene to the airway epithelium. *Cell* 68:143-155, 1992.

Note added in proof: The channel nature of CFTR has been confirmed by reconstitution of purified recombinant CFTR into artificial lipid bilayers (C.E. Bear et al., *Cell* 68:809-818, 1992).

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SINO-BRONCHIAL REFLEX, ASTHMA AND SINUSITIS

JUAN A. BROWN, M. D.*

Galen in the second century suggested that lung disease was caused by "dripping secretions from the brain." A patient of a distinguished physician suffering from sinusitis and asthma was counseled, "If you have a leak in the basement, you better check the roof." The clinical correlation between sinusitis and pulmonary disease, the Sino-Bronchial Reflex (SBR), is present in all age groups, and is most dramatic in asthmatic patients, and may be a complicating factor in pneumonia, bronchitis and chronic obstructive pulmonary disease.

The association of sinusitis and pulmonary disease was reported years ago by authors describing cases of asthma and sinusitis in adults and children with one view that hayfever resulted in asthma.¹⁻⁴ Several investigators cast doubt on the existence of this clinical relationship, notably Zimmerman who found no correlation between the severity of asthma and the degree of radiographic sinusitis in children.⁵⁻⁷ Despite these negative accounts many more studies describe a SBR.⁸⁻¹⁶ Nolte and Berger recognized that a nasal cold stimulus will cause bronchial constriction in laryngectomy patients, who have no physical connection between the upper and lower airway, strongly supporting a reflex mechanism.¹⁷

Bronchospasms can be produced as a result of stimulation of the neuroreceptors in the nose, pharynx, and sinus areas. There are three mechanisms to explain this reflex. The most common is composed of postnasal mucopurulent material which seeds the bronchial tree resulting in an altered reactivity of the pulmonary mucosa. The mucosa acts as a mediator and affects the cells in the lower airway by chemotactic factors.¹⁸ Second,

Slavin also presented strong evidence that a partial beta adrenergic blockage may be present in patients with asthma.¹⁹ Infections of sinus mucosa as well as bronchial tissue tends to enhance blockage contributing to increased hyperirritability of the bronchial tree.

The third reflex in the nose, sinuses, and pharynx communicates via afferent fibers in the trigeminal and the glossopharyngeal nerves with the dorsal vagal nucleus, the efferent parasympathetic fibers of which complete the reaction by smooth muscle contraction of the bronchial tree^{18,20} (Table I).

Neural-chemical receptors are present and play an important part in nasal physiology as follows: Alpha adrenoceptor, beta2 receptor, cholinceptor, H1-histamine receptor, H2-histamine receptor, and the irritant receptor. Settipane has recently published the pharmacology of neuro-chemical receptors.²¹

CASE REPORTS

A 63-year-old male was seen initially in 1977 with acute frontal sinusitis which was resolved with medical therapy. During the next 13 years the patient continued with recurring sinus infections, seeing various physicians, while at the same time his physical condition continued to deteriorate. He developed progressive chronic obstructive pulmonary disease (COPD) requiring massive steroid therapy, nasal oxygen, and pulmonary aerosol treatments at home, four times daily. Acute changes in his condition resulted in further evaluation by his family physician who identified sinus disease on routine roentgenograms. The endoscopic sinus examination revealed polyps extending from the middle meatus with blockage of the osteomeatal units. Computerized tomography (CT) of the sinuses revealed extensive disease

*1303 McLees Road, Anderson, SC 29621-3344.

TABLE 1
NASAL REFLEXES

	Type	Action
1	Rhinobronchial	Bronchospasm
2	Sneezing (5th nerve)	Clears nasal passages
3	Rhinosalivary	↑Salivation
4	Rhinogastric	↑Gastric secretion
5	Exercise (hypothalamus)	↓Nasal resistance (↑sympathetic tone)
6	↑CO ₂ (arterial chemoreceptors)	↓Nasal resistance
7	↓CO ₂ (arterial chemoreceptors)	↑Nasal resistance
8	Vasomotor rhinitis (parasympathetic overactivity)	↑Nasal resistance
9	Nasallacrimal	↑Tearing
10	Pain/Fear (adrenalin)	↓Nasal resistance
11	Recumbent position	↑Nasal resistance
12	Lateral recumbent position	↑Nasal resistance (on down side)
13	Submersion reflex	Apnea, bradycardia, and ↑BP

involving the maxillary, ethmoid and left frontal sinuses. The findings at Functional Endoscopic Sinus Surgery (FESS) were consistent with inflammatory polypoid mucosal changes throughout the ethmoid and maxillary sinuses. Six months post-operative the patient was not using nasal oxygen, had decreased his steroid therapy and only required aerosol treatments twice daily at home.

A 50-year-old male respiratory therapist had been in excellent health until he developed adult onset asthma. Despite extensive medical evaluation and therapy this condition did not improve so he was referred for rhinologic consultation. The endoscopic examination revealed severe deviation of the septum with compaction of the middle turbinates laterally resulting in obstruction of the osteomeatal units. A CT revealed disease involving the ethmoid, maxillary and frontal sinuses. The patient underwent septoplasty and FESS with the findings of inflamed polypoid mucosa throughout the anterior and posterior ethmoids. Small mucus retention cysts

were also removed from the maxillary sinuses. Fourteen months after surgery, the patient has no pulmonary symptoms and is receiving no medication.

DIAGNOSIS

Recognition of a SBR requires a high index of suspicion for the patients may manifest

TABLE 2
SYMPTOMS OF CHRONIC
SINUSES DISEASE

- A. Congestion/obstruction
- B. Secretion, halitosis
- C. Fullness/pressure – mild to severe pain
- D. Headache – temporal, frontal
- E. Dental pain
- F. Chronic pulmonary conditions
 - 1. Chronic cough
 - 2. Bronchitis
 - 3. Asthma
 - 4. Recurrent pneumonia

refractory symptoms despite extensive pulmonary therapy. The majority are asthmatics, but other clinical entities, e.g., pneumonia, bronchitis, and chronic obstructive pulmonary disease are related. Many had deterioration of their pulmonary function studies along with increased usage of corticosteroids for an unexplained reason. Symptoms of sinusitis are more difficult to recognize and may not even be met with because of the therapy pursuant to the severe pulmonary condition (Table 2).²²

When the diagnosis of sinusitis was suspected it was confirmed by physical examination, routine sinus x-rays, and/or coronal CT. An upright Waters film may be all that is necessary when sinus disease is questioned in these refractory pulmonary cases. This single roentgenogram reveals disease or fluid in the ethmoid, frontal and maxillary sinuses and bony erosion or orbital changes.

THERAPY

Medical treatment remains the choice in patients with sinusitis. Weille in 1936 related 500 asthmatics who underwent medical or surgical therapy. Two hundred ten patients accepted sinus surgery, and the remaining 290 medical treatment. Two-thirds of each group improved regardless of the method, significantly favoring a noninvasive technique.¹⁶

Surgical ventilation and sinus drainage is only undertaken after extensive medical therapy. The pediatric age group requires a conservative approach because of small, poorly developed, irregular sinuses. It would be difficult to recommend surgical treatment for an asthmatic child just because he had a "runny nose." If disease persists in this age group despite prolonged therapy, adenoidectomy and antral lavage should be attempted before intranasal sinus surgery. Adults without evidence or history of chronic sinus disease frequently respond to a single antral lavage.

Antral lavage requiring passage of a trocar directly into the maxillary sinus followed by irrigation with warm saline solution can be accomplished under local anesthesia as an

TABLE 3
ETIOLOGY OF CHRONIC
OBSTRUCTION OF THE
OSTEOMEATAL UNIT

- | | |
|----|---|
| A. | Nasal polyps |
| | 1. Allergic |
| | 2. Infection |
| B. | Turbinate engorgement |
| | 1. Allergic |
| | 2. Infection |
| C. | Turbinate enlargement |
| | 1. Congenital |
| | 2. Allergies |
| D. | Deformity of uncinate process;
ethmoid bulla |
| | 1. Congenital |
| | 2. Traumatic |
| E. | Deviated nasal septum |
| | 1. Congenital |
| | 2. Traumatic |
| F. | Fractures (Leforte, nasal) |
| | 1. Acute |
| | 2. Chronic |

office procedure. The results may be convincing, and the diagnostic features comprise cytology, bacterial culture and sensitivity, as well as significant relief.

An endoscopic examination and coronal CT of the sinuses may be useful to identify a chronic obstructive connection involving the osteomeatal units, a group that responds well to FESS. (Table 3).²²

Eight hundred fifty six patients at Anderson ENT Clinic have undergone FESS since 1985. One hundred two adults were referred with severe asthma or chronic pulmonary problems, and an overwhelming majority realized meaningful improvement in their clinical pulmonary conditions. A larger number of pediatric patients were treated by adenoidectomy and antral lavage, the results of which will be detailed at a later date. In none of the patients was surgery such as trephine of the frontal sinus or external incisions necessary; one patient underwent a Caldwell-Luc operation.

SUMMARY

Sinusitis should be suspected in cases of chronic, difficult to control asthma or other pulmonary diseases. Appropriate measures to diagnose and treat sinus disease are listed, and an upright Waters roentgenogram may be all that is required for diagnosis. A true sino-bronchial reflex is proposed in these patients. Nasal receptors and reflexes are effective in the physiology of the nose, and in many cases, the diagnosis and treatment of rhinitis and sinusitis results in the improvement of various chronic pulmonary conditions. □

REFERENCES

1. Gottlieb MJ: Relation of intranasal disease in the production of bronchial asthma. *JAMA* 1925; 105-107.
2. Chobot R: Incidence of sinusitis in asthmatic children. *Am.J Dis. Child* 1930; 39: 257-263.
3. Bullen SS: Incidence of asthma in 400 cases of chronic sinusitis. *J Allergy* 1932; 4: 402-407.
4. Haseltine EA: The relationship of asthma to hayfever. *Clin. Med* 1925; Feb.: 77-80.
5. Hoehne JH and Reed CE. Where is the allergic reaction in ragweed asthma? *J Allergy Clin Immunol* 1971; July; 48(1): 36-39.
6. Rosenberger GL, et al. Inhalation challenge with ragweed pollen in ragweed sensitive asthmatics. *J Allergy Clin Immunol* 1983; Mar; 71(3): 302-310.
7. Zimmerman B, Stringer D et al. Prevalence of abnormalities found by sinus x-rays in childhood asthma: Lack of relation to severity of asthma. *J Allergy Clin Immunol* 1987; 88: 268-273.
8. Businco L, Fiore L, et al. Clinical and therapeutic aspects of sinusitis in children with bronchial asthma. *Int J Ped Otorhinolaryngol* 1981; 3: 287-294.
9. Friedman R, Ackerman M, et al. Asthma and bacterial sinusitis in children. *J Allergy Clin Immunol* 1984; 74: 185.
10. Rachelefsky GS, et al. Chronic sinus disease with associated reactive airway disease in children. *Peds* 1984; April 73 (4): 526-529.
11. Cummings NP, et al. Effect of treatment of rhinitis/sinusitis in asthma: Results of a double blind study. *Ped Res* 1983; 17: 373.
12. Adinoff AD, et al. Chronic sinusitis in childhood asthma: Correlations of symptoms, x-rays, culture and response to treatment. *Ped Res* 1983; 17: 264.
13. Davidson FW. Chronic sinusitis and infectious asthma. *Arch Otolaryngol* 1969; 90: 110-115.
14. Slavin RG, Cannon RE, et al. Sinusitis and bronchial asthma. *J Allergy Clin Immunol* 1980; Sept 66(3) 250-252.
15. Werth G. The role of sinusitis in severe asthma. *Immunol and Allergy Prc* 1984 Mar; 7(3): 45-49.
16. Weille FL: Studies in asthma: Nose and throat in 500 cases of asthma. *N Eng J Med* 1936; 215: 235-239.
17. Nolte D, Berger D. On vagal bronchoconstriction in asthmatic patients by nasal irritation. *Eur J Respir Dis* 1983; 64: 110-114.
18. Slavin RG. Relationship of nasal disease and sinusitis to bronchial asthma. *Ann Allergy* 1982; 49: 76-80, 1982.
19. Slavin RG, et al. Sinusitis and bronchial asthma. *J Allergy Clin Immunol* 1980; 66: 250-256.
20. Settupane GA. Nasal neural-chemical receptors. *NER Allergy Proceedings* 5: 329, 1984.
21. Settupane, GA. Current treatment of ambulatory asthma. *New England Regional Allergy Proceedings* 1986: Chap II; 6-10.
22. Brown, JA, Hurst LR. Endoscopic technique for sinus surgery. *J SCMA* 1989; 85: 417-418.



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July 1992

SMOAK WINS SEAT ON AMA BOARD OF TRUSTEES

Randolph D. Smoak, Jr., MD, was elected to a three-year term on the AMA Board of Trustees at the Annual Meeting of the AMA held in Chicago last month. Dr. Smoak extends his sincere appreciation to members of the SCMA Board of Trustees, his colleagues, SCMA staff and all who supported him in his campaign.

Dr. Smoak will remain on the SCMA Board of Trustees as an honorary member in accordance with SCMA bylaws. The opening created will be filled by the board in the near future. The SCMA Delegation to the AMA has been reorganized, with Walter J. Roberts, Jr., MD, chairman, and Donald J. Kilgore, Jr., MD, vice chairman. □

MEDICARE UPDATE

Coordination of Medicare and Veterans Benefits: Veterans who are also entitled to Medicare have a choice as to which one of the programs will be responsible for payment for services covered by both programs. You do not need to submit claims involving a veteran to the Veteran's Administration (VA) for denial before a Medicare claim can be submitted.

New Patient Definition Revised: HCFA has revised its definition of a "new patient" in a group practice setting. Under the revised policy, HCFA defines a "new patient" as one who has not been seen by another member of the group practice, **within the same specialty**, within a three-year period. This change is retroactive to the first of the year. You may appeal if you billed "established" patient visits that now qualify as "new" patient visits for dates of service on or after January 1, 1992.

Monitored Anesthesia Care: The modifier "QS" has been developed to be used with anesthesia codes to identify monitored anesthesia care. It will always be used **in addition** to another modifier. Payment may be made when monitored anesthesia care is performed in its entirety by a physician or the physician directs four or fewer concurrent anesthesia procedures, including monitored anesthesia care. In all cases in which medical direction is furnished, the physician must be physically present in the operating suite. The fact that the physician personally furnished or directed the monitored anesthesia does not guarantee Part B coverage.

Reminder: All Medicare as secondary payer claims must

be sent in hard copy with a copy of the primary carrier's EOB.

Duplicate Claims: Approximately 235,000 duplicate claims are received each year. Most Medicare claims are processed well within 30 days of the date received. You should allow **at least** 30 days before inquiring about an unpaid claim. Then check the status through the Automated Response Unit (ARU). For a list of the ARU options, see the August 1991 Medicare Advisory. The ARU phone numbers are:

Participating Providers: (803) 788-5568

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You **must** use the new HCFA 1500 forms beginning July 1, 1992.

UPIN: All claims for Medicare covered services and items that are the result of a physician's order or referral must include the ordering/referring physician's name and UPIN. Claims for in-office diagnostic laboratory and radiology services require the name and UPIN of the ordering physician, even if the ordering physician is the performing physician. The ordering/referring requirement became effective on January 1, 1992.

All persons who meet the Medicare statutory definition of a physician must obtain a UPIN if they refer Medicare beneficiaries, even though they may never bill Medicare directly. If you have not been assigned a UPIN, you should contact your local Medicare carrier. SC-based physicians who have not been assigned a UPIN should send a written request for a UPIN to: Medicare Part B Provider Certification, PO Box 100190, Columbia, SC 29202. □

MEDICAID UPDATE

Medicare/Medicaid Coinsurance and Deductible Claims: The May 26, 1992 Medicaid bulletin gave instructions for filing hard copy Medicare Coinsurance and Deductible Claim forms (Form SHHSFC 208). This method of filing does not replace the automated Medicare-Medicaid crossover payment system. Form 208 should be completed only when at least 60 days have passed since the Medicare payment has been received on a claim for a dually eligible recipient. Beginning July 1, 1992, regardless of the date of service, an Explanation of Medicare Benefits (EOMB) must accompany the Form 208.

The South Carolina Health Access Plan: The South Carolina Health Access Plan (SCHAP) will begin later this year in Horry and Marion counties. SCHAP is a managed care, Medicaid-based health insurance demonstration project approved by HCFA to provide health insurance to a limited number of low income, uninsured employees of small businesses and their families over a three-year period. The State Health and Human Services Finance Commission will be responsible for the operation of the SCHAP. More details will be released as the program nears implementation.

OSHA BLOODBORNE PATHOGENS REGULATIONS

A seminar regarding the bloodborne pathogens rule was put on by the S.C. Department of Labor and was attended by SCMA staff. The following information was received at the workshop and may help explain some of the specifics of the standard.

ENFORCEMENT: As this newsletter goes to press, the Dept. of Labor is printing and will be distributing an enforcement document relating to the bloodborne pathogens regulations. When we receive this document, we will update you with any new information.

At the seminar, we did learn that citations can be between \$1,000 and \$7,000 for each violation. An inspector may issue a citation for a particular violation, as well as a citation for insufficient training. During an inspection, the inspector will read the employer's Exposure Control Plan and compare the facility to this plan. Therefore, if you are adapting a prepared sample plan, be sure to take out any parts that do not apply to your practice. Otherwise, you may be held accountable for those parts of the plan.

The department plans first to perform inspections on larger medical facilities; however, if a complaint is made regarding your facility, your chances of being inspected will rise. If the department determines the complaint to be valid, they plan to perform an inspection within 72 hours. These inspections will be unannounced.

STORAGE FOR SHARPS: Note that all containers for storing sharps must be red or prominently display the biohazard symbol. They must be leakproof and you must be able to close them securely for transport.



biohazard symbol

STORAGE FOR SPECIMENS: Jars of specimens must be closed securely. If the jars are stored in a tub or rack, the storage container may remain open in your office.

However, you must be able to close it securely for transport. This outside container must be labeled in accordance with the regulations.

JANITORIAL SERVICES: For any janitorial service personnel not employed by the facility, the employer of the personnel is responsible for enforcing the OSHA regulations.

EQUIPMENT: When equipment in your office needs to be cleaned or repaired, you must label and tell the persons performing the servicing which parts have been contaminated. It should be decontaminated to the extent possible prior to having it serviced.

PERSONAL PROTECTIVE EQUIPMENT: There is no list of exactly what equipment or clothing is required for specific procedures. However, some offices have developed their own charts outlining what equipment is necessary for the procedures that they perform.

The regulations state that the protective equipment must be "appropriate" for the task being performed. The equipment or clothing is not "appropriate" if it allows blood or other potentially infectious material to reach the employee's street clothes, skin, eyes, mouth, or other mucous membranes. Employees who have occupational exposure must wear protective equipment as designated by their employer. It is not an option that they can decline.

If the protective equipment or clothing becomes contaminated or torn during a procedure, the employee should remove and replace it as soon as it is feasible without jeopardizing the patient. It is the responsibility of the employer to launder, repair and replace personal protective equipment. Protective clothing cannot be taken home by an employee to launder. It was suggested that employees keep a change of clothes at work in case their street clothes do become contaminated.

HBV VACCINE: An employer cannot mandate, but can offer, prescreening for employees. The training sessions required by the regulations must include information on the vaccine including its efficacy, safety, method of administering, benefits of vaccination and contraindications. The physician who provides care for the employee must provide a written opinion to the employer indicating whether the employee did or did not receive the vaccine. The rest of the medical record is confidential.

POST-EXPOSURE EVALUATION: After an exposure incident, the employer should determine how to prevent the incident from recurring. Inspectors will look for recurrent patterns of exposure incidents.

Following an exposure incident, the employer must make available to the employee a confidential medical evaluation and follow-up. A list is given in the standard of all information that the employer must supply to the physician performing the evaluation. The physician shall provide a written opinion to the employer including the following: that the employee has been informed of the results of the evaluation, and that the employee has been informed of any conditions which require further evaluation or treatment. All other diagnoses shall remain confidential and should not be included in the report.

The physician who provides the HBV vaccine and any post-exposure evaluation may be the employer if

the employer is a licensed physician. However, some employees may prefer another physician to provide these services. If the employer provides these services, the employee's medical record should be kept separately under lock and key from other patients' records.

TRAINING: If you have an employee with multiple worksites, you should not assume that they have received adequate training at another worksite. Also, there will be some information that is specific to your practice. It is the employer's responsibility to ensure that his or her employees are properly trained.

Training must be provided by someone knowledgeable in the subject matter. Training may be divided and given by several different people. For instance, a physician may discuss the medical aspects including transmission of bloodborne pathogens and the epidemiology of HIV and HBV, an infection control nurse may discuss engineering controls and personal protective equipment, while the office manager may discuss the exposure control plan and specific protocols in the office.

To receive a copy of the standard, call the SCMA office. For specific questions, put your request in writing to Don Gissendanner, SC Dept. of Labor, P.O. Box 11329, Columbia, SC 29211-1329. □

OIG FRAUD ALERT

The Office of the Inspector General of HHS recently released a "special fraud alert" which identifies inappropriate incentive packages which hospitals may offer physicians to stimulate referrals. A "HHS OIG Hotline", (800) 368-5779, has been established for individuals to report information about hospitals which offer these types of incentives to physicians:

- Payment of any sort of incentive by the hospital each time a physician refers a patient to the hospital.
- The use of free or significantly discounted office space or equipment (in facilities usually located close to the hospital).
- Provision of free or significantly discounted billing, nursing or other staff services.
- Free training for a physician's office staff in areas such as management techniques, CPT coding and laboratory techniques.
- Guarantees which provide that, if the physician's income fails to reach a predetermined level, the hospital will supplement the remainder up to a certain amount.

- Low-interest or interest-free loans, or loans which may be "forgiven" if a physician refers patients (or some number of patients) to the hospital.
- Payment of the cost of a physician's travel and expenses for conferences.
- Payment for a physician's continuing education courses.

A seminar on "Financial Relationships with Referral Sources: Safe Harbors Now and in the Future" will be held July 28, 1992 at the Embassy Suites Hotel in Columbia. This seminar is sponsored by the SCHA, SCMA, SC Healthcare Financial Management Association and the SCHA Risk Management Program. *Contact the SC Hospital Association in Columbia at 796-3080 for registration information.*

For additional information, see also the article in this issue of *The Journal* entitled "Medicare Fraud and Abuse, Anti-kickback Safe Harbor Regulations: Where do we go from Here?" by David W. Ball, LL.M., JD. □

PHYSICIAN'S PATIENT RECORD ACT BECOMES LAW

Much of the confusion surrounding access to copies of medical records by patients, their attorneys, and insurance carriers has been laid to rest with passage of the Physician's Patient Records Act (H.4510). Introduced in the House by Rep. James Harrison and in the Senate by Sen. Alex Macaulay, the measure contains numerous provisions about which physicians and attorneys should familiarize themselves.

The act provides that the physician is the owner of the record and that a patient or his legal representative has a right to receive a copy of his medical record upon request when accompanied by a written authorization from the patient or the patient's representative. Physicians may rely on the representations of insurance carriers that the patient's authorization is on file with the carrier in order to expedite claims processing. A physician who relies on such representation in good faith is immune from civil or criminal liability alleged to be caused by the release of the record.

The act also provides that a physician may refuse to release a copy of the entire medical record where the physician has knowledge or a reasonable belief that release of certain information would cause harm to the patient's emotional or physical well-being, the emotional or physical well-being of another person who has given information regarding the patient to the physician, or where release of the information is otherwise prohibited by law. This "therapeutic exception" does not apply to requests for a copy of the entire record made by an attorney representing the patient, or by an insurance company regarding applications for insurance or claims administration for health, accident, and property and casualty insurance.

Medical records may not be withheld from the patient because of an unpaid bill for medical services.

Physicians may charge a fee of \$.50 per page or a \$10 minimum fee, plus actual postage costs, for making copies of existing medical records. When a request for medical information involves more than making copies of an existing record, the physician may charge reasonable fees,

exclusive of the fees authorized for making copies of the existing record, for providing this service. Payment for all services related to medical record requests is a just debt, due and payable at the time service is rendered. A physician may require payment in advance for a copy of the record.

A physician may not charge for information requested by an entity who requests the information to support a claim related to health or accident insurance when the physician of whom the request is made provided the service.

The act requires physicians to retain medical records of their adult patients for a period of 10 years, and 13 years for patients who are minors. These periods run from the last date of treatment. After these periods expire, the physician may destroy the record.

Physicians are prohibited from selling their medical records to anyone other than a physician or osteopath licensed by the SC State Board of Medical Examiners, or a hospital licensed by DHEC. Exceptions to this prohibition may be approved by the Board of Medical Examiners. Before a physician can sell medical records, he must publish a public notice of his intention to sell the records in a newspaper of general circulation in the area of the practice at least three times in the 90 days preceding the sale. The notice must advise patients that they can retrieve their records if they do not want them included in the sale.

Physicians who in good faith release medical records pursuant to the patient's written authorization are immune from civil or criminal liability and the disciplinary action for injuries or damages alleged to be caused by release of the record.

The new provision also contains a statement that the act is not intended to affect any other provision of law concerning medical records, the alteration of records, any interest a patient has in the information contained in the record, or any civil action brought in state or federal court alleging medical negligence, or the authority of a court or licensing board to issue a subpoena to obtain the record.

□

WASHINGTON UPDATE

Health Care Reform: The House Republican Leaders' Health Task Force introduced its health care reform proposal last month. The bill was crafted as an alternative to the proposal sponsored by Representative Pete Stark (D-CA), which contains global budgets and extends Medicare rates to private payers.

The bill, HR 5325, was cosponsored by 77 Republican House members and includes incremental measures such as small market insurance reforms, professional liability reforms, market-oriented cost containment measures, a ban on physician self-referral activities (limited exceptions), plans to streamline insurance claims processing and initiatives to enhance physician self-regulation, including improved protection from antitrust laws.

The AMA was consulted extensively on the development of the Republican package.

Meantime, the Democrats on the House Ways and Means Committee were unsuccessful in reaching agreement on a health care reform proposal. Majority Leader Richard Gephardt (D-MO) was pushing for the Stark bill to be reported out of the Ways and Means Committee by June 22, with the goal of bringing legislation to the House floor by early July.

The Democrats on the House Energy and Commerce Committee have held a preliminary meeting with Majority Leader Gephardt to discuss various health reform options. No decisions were reached. □

SALES AND USE TAX REMINDER

The medical community is reminded that the South Carolina Tax Commission has shown it will aggressively enforce the provisions of South Carolina's sales and use tax laws on professionals such as physicians, lawyers and accountants.

Collection of use taxes has proven to be particularly burdensome on the medical community since the agency began stepped-up enforcement of the law.

Physicians often purchase equipment, supplies, and medications from out-of-state vendors. Some vendors collect the sales tax at the time of purchase and remit the money to the tax commission. In that case, the physician has no responsibility for the tax. Other vendors do not collect sales tax at the time of purchase. Here, the physician is responsible for paying a tax of five percent of the purchase price to the tax commission on a use tax return.

Failure to pay these taxes can result in the assessment of interest and penalties.

When you make purchases of any item for your office, including magazines, prescription medications, supplies, office equipment, etc., be sure to note whether the vendor collected South Carolina sales tax on the items. If they did not do so, the physician is responsible for the tax.

You should contact your accountant or the South Carolina Tax Commission to obtain the proper forms for registration and filing. □

CAPSULES

The American Medical Directors Association, the professional association representing long term care physicians, recognized the charter group of Certified Medical Directors of a Long Term Care Facility (CMD) at its annual symposium this year. *David Stokes, MD, CMD*, of Spartanburg and *Bradford Whitney, MD, CMD*, of Landrum were among those recognized.

Michael Holmes, MD, of Kingstree has served 24 consecutive years as Doctor of the Day at the State House.

Roy Edgar Smith, MD, MUSC Resident, and *James G. Bouknight, MD*, William S. Hall Institute Resident, were recognized recently by the AMA for their contributions to community service. They were among 50 honorees of the AMA/Burroughs Wellcome Leadership Program for Resident Physicians.

VIDEOTAPES/PUBLICATIONS

✓ The AMA has developed a videotape on the OSHA regulations regarding bloodborne pathogens. The video gives guidance on how to implement the requirements and also what to expect from OSHA inspectors.

✓ The SCMA also has videotapes on Health Access America, the AMA's plan for healthcare reform. There are two versions (21 and 11 minutes) which may be helpful in speaking to groups about the problems in our healthcare system or they may be used at medical society meetings to educate members on the AMA plan.

✓ A 45-minute videotape entitled "New Frontiers: Understanding and Treating Alcoholism" was produced for American Medical Television and is also available for loan.

To request any of these materials, please call Pam Moss-er at SCMA headquarters.

✓ The Agency for Health Care Policy and Research (AHCPR) has recently published three clinical practice guidelines, including information of proven clinical value relating to: *Acute Pain Management*; *Urinary Incontinence in Adults*; and *Prediction, Prevention and Early Intervention of Pressure Ulcers*. Guidelines are published in three formats including a clinicians' version, a quick-reference guide for health professionals, and a patient/consumer pamphlet (also available in Spanish) suitable for distribution by hospitals or in physicians' waiting rooms.

All guidelines, including the quick-reference guide and patient educational materials, are available without charge from AHCPR Publications Clearinghouse, PO Box 8547, Silver Spring, MD 20907 or call 1-800-358-9295. □

MEDICAL STAFF LEADERSHIP PROGRAMS

✓ If you are a newly elected or appointed chief-of-staff, department chairperson, medical staff committee chairperson — or if you serve in any other medical staff leadership capacity — "Interactions" can enhance your knowledge of the skills and tools you'll need to be successful in your challenging and important role. "Interactions", a medical staff leadership program sponsored by the AMA, will be held October 2-3, 1992 at the Chicago Marriott Downtown, Chicago, Illinois. The registration fee for AMA members is \$495, non-members \$595.

For immediate registration or information call 1-800-621-8335.

✓ In addition, the SCHA/SCMA Vice Presidents of Medical Affairs Council is presenting a program on "Clinical Decision Making in the Era of Accountability" on Thursday, September 17, 1992 at 12:00 noon at the Hilton Resort (formerly Mariner's Inn) on Hilton Head Island. The session has been specifically designed to educate medical staff officers about the data profiles which are being generated by the SC Office of Cooperative Health Statistics for use by hospitals in conducting quality or utilization review. Those attending will be presented with actual data from their hospital and will see how their hospital compares with its peers.

For registration information, contact Doris Clevenger at the SCHA in Columbia, 796-3080. □

OTHER PROGRAMS/WORKSHOPS

✓ The fourth risk management program for new physicians will be held in Columbia on Thursday, September 17, 1992 at SCMA Headquarters (I-26 and St. Andrews Road), 2:00-5:00 pm. Entitled "Risk Management in the '90s: Helping each other in a Risky Business," the program was developed by the SCMA Risk Management Committee specifically for physicians entering their first or second year of practice. Attendance at this program will entitle such physicians to a 50 percent discount on their JUA insurance for the first year of practice and a 25 percent discount for the second year.

Preregistration is required as seating is limited. There is no registration fee. *Call Joy Drennen at 1-800-327-1021 or in Columbia at 798-6207 to register.*

✓ AMA Financing & Practice Services, Inc., is offering two retirement programs at Hilton Head, SC in August:

"Financial Strategies for Successful Retirement for Senior Physicians" - August 6
"Gearing up for Retirement" - August 7

For information or to register, call 1-800-366-6968.

✓ To prepare physicians and their staffs for the physician office lab (CLIA) regulations which begin September 1, the SCMA will conduct workshops in conjunction with SmithKline Beecham Clinical Lab and Palmetto Pathology on August 4 in Charleston, August 5 in Columbia and August 6 in Greenville. Registration materials are being mailed to all SC physicians. □

From the State House: South Carolina Medical Association LEGISLATIVE UPDATE



July, 1992

Gearing up for what appears to be a rigorous fall campaign schedule, the legislature worked at a feverish pace the last six weeks of the 109th session of the General Assembly.

Bills which will have a major impact on South Carolina physicians were passed by both houses. The major pieces of legislation monitored and lobbied by the SCMA are:

PHYSICIAN PATIENT RECORDS ACT: ** (See Summary of Act on page four.)*

This act gives patients a legal right to obtain a copy of their record and states that physicians own their patients' records. It also establishes time periods for record retention, establishes a legal right for physicians to be paid for copying the records, and limits physician liability for complying with requests to obtain copies of the records.

PRESCRIPTIVE PRIVILEGES FOR NURSE PRACTITIONERS:

This act and accompanying regulations will allow a nurse practitioner to write prescriptions, under physician supervision, for non-controlled substances under protocols approved by both the Board of Nursing and the Board of Medical Examiners.

CERTIFICATE OF NEED:

This act will revise the CON law. Physicians purchasing diagnostic equipment which costs more than \$600,000 will be required to obtain a CON. Physicians' office equipment and buildings are exempt from the law. The bill also completely revises the procedural laws governing the CON process in an attempt to "de-politicize" the process (not yet signed by the governor).

HEALTH CARE POWER OF ATTORNEY:

This act creates a statutory form for a durable power of attorney for health care.

RETIRED PHYSICIAN SPECIAL LICENSE:

This act authorizes the South Carolina Board of Medical Examiners to promulgate regulations, no later than November 1, 1992, outlining qualifications for the issuance of a special class of license for physicians who are retired from active practice and wish to donate their expertise for the care and treatment of needy patients or patients in underserved areas.

FIREWORKS/BOTTLE ROCKET LEGISLATION:

This act outlaws the sale of bottle type rockets of a certain size in SC. The SCMA supported this legislation because of eye injuries caused by these fireworks.

HEALTH CARE PROFESSIONAL COMPLIANCE ACT:

This act authorizes DHEC to oversee and implement applicable CDC recommendations which apply to health-care professionals. The department shall provide consultation and assistance to licensing boards, as appropriate, to ensure compliance with CDC recommendations. Also, the department shall appoint at least one or approve an existing review panel, consistent with the CDC recommendations. By October 1, 1992, each licensing board shall adopt the CDC recommendations and shall communicate with its respective health care professionals by written notice of their adoption.

Among the bills that the SCMA actively lobbied against which did not become law were:

INDEPENDENT PRACTICE FOR PHYSICAL THERAPISTS:

This bill would allow Physical Therapists to practice without physician referral.

MANDATED INSURANCE BENEFITS FOR PSYCHOLOGISTS:

This bill would prohibit health insurance policies that contained mental health benefits from refusing to cover the services of a licensed Phd psychologist.

INFORMED CONSENT FOR ABORTION:

This bill would require certain information, designated by the state to be provided by the physician before performing an abortion.

TRIPPLICATE PRESCRIPTION FOR CONTROLLED SUBSTANCES:

This bill would require that prescriptions for controlled substances be written on triplicate prescription pads.

MANDATORY ASSIGNMENT FOR MEDICARE:

This bill would prohibit a physician who receives payment under a supplemental program of coverage to Medicare, or other governmental programs, from charging to or collecting from a subscriber an amount in excess of the reasonable charge for the service provided as determined by the US Secretary of Health and Human Services.

PATIENT'S CHOICE OF PHYSICIAN FOR WORKERS COMP INCLUDING CHIROPRACTIC COVERAGE:

This bill would require the Workers' Compensation Commission to allow an injured employee to choose his physician or other licensed healthcare worker including chiropractic coverage.

PHYSICIAN ASSISTANT EXPANDED SCOPE OF PRACTICE:

This bill would have expanded the scope of practice for Physician Assistants to include writing prescriptions for controlled substances, under the supervision of a physician.

One piece of legislation that was pending on the calendar when the legislature adjourned was the increase in the cigarette tax. This bill, which would increase the state tax on cigarettes five cents per pack, came very close to passing. The original bill would add a five cent user fee on each pack of cigarettes earmarked for the Medicaid Program.

The Ways and Means Committee chose to fund the deficit in the Medicaid dollars with a license fee increase on providers such as hospitals, physicians, and pharmacists. The SCMA lobbied strongly against this proposal, and with the help of a lot of physicians across the state the proposal was defeated on the floor of the House.

MEDICARE FRAUD AND ABUSE ANTI-KICKBACK SAFE HARBOR REGULATIONS: WHERE DO WE GO FROM HERE?

DAVID W. BALL, J. D., LL.M.

INTRODUCTION

Recently, new so-called safe harbor regulations were issued that provide some protection to physicians and other health care providers from Medicare fraud and abuse concerns. The new regulations are not the panacea many hoped they would be. Joint ventures, business arrangements and referral arrangements should be reviewed in light of the new safe harbor regulations. In some instances, the arrangements will need to be restructured to comply with the safe harbors. In other instances, compliance with the safe harbors will not be possible and physicians must decide whether to continue existing arrangements without safe harbor protection or take drastic measures such as divestiture of ownership interests.

THE MEDICARE FRAUD AND ABUSE STATUTE

Physicians and their attorneys have wrestled with and been confounded by the Medicare Fraud and Abuse Anti-Kickback statute. The statute makes it a criminal felony offense to knowingly and willfully offer, pay, solicit or receive remuneration in order to induce business reimbursed under the Medicare or state health care programs. Civil penalties and exclusion from the Medicare program are also available sanctions.

The statute is extremely broad. It is disconcertingly easy to violate the anti-kickback statute and the most innocuous or even beneficial arrangement could be deemed an

offense under the statute. For example, the following acts may violate the statute:

1. A hospital advertises that it will waive Medicare co-insurance and deductible amounts in order to attract patients.
2. A clinical laboratory leases office space to a physician at favorable rates in the hope of obtaining referrals from the physician.
3. A physician group and a therapy group enter into a 50-50 partnership for a new therapy clinic and agree to split profits equally.
4. A retiring physician sells his medical practice to a younger doctor, but stays on in a consulting role and continues to receive compensation from the practice for his consulting responsibilities.
5. A general practitioner physician and a specialist have a cross referral arrangement where each refers patients to the other.
6. A physician specialist allows a general practitioner to use his Hilton Head condominium for two (2) weeks each summer at no cost.

THE NEW SAFE HARBOR REGULATIONS

The new safe harbor regulations were issued July 29, 1991. They provide a minimal level of certainty in structuring business arrangements. The safe harbor regulations do not tell us what is illegal but they do mark out what is clearly legal. Most joint ventures and many other business arrangements are not within

the safe harbors and their legality remains in question. Each will have to be examined on its own facts and circumstances and the risk assessed on that basis.

Ten safe harbors have been created. In order to fit within a safe harbor each element of the particular safe harbor must be met. The safe harbors are:

1. Investment Interests
2. Space Rental
3. Equipment Rental
4. Personal Services and Management Contracts
5. Sales of Practices
6. Referral Services
7. Warranties
8. Discounts
9. Employees
10. Group Purchasing organizations

Certain of these safe harbors are examined in more detail below.

Investment Interests

The regulations divide investment interests into the following two (2) categories: large publicly traded entities and small entities such as joint ventures or partnerships.

1. Large Entities. To fit within the safe harbor, the investment entity must possess more than fifty million dollars (\$50,000,000.00) in undepreciated net tangible assets related to the health care business. In addition, a series of other requirements must be met. The additional requirements are designed to ensure that the investor is treated like other investors who do not have the potential to refer. In essence, this safe harbor protects physicians who buy stock in large publicly held companies as personal investments.

2. Small Entities. This is the safe harbor of greatest interest and concern to most South Carolina health care providers. The following stringent requirements must be met:

- (i) No more than forty percent of the investment interest may be held by investors who are in a position to

make or influence referrals to, furnish items or services to, or otherwise generate business for the entity.

(ii) Passive investors (those who are not responsible for the day-to-day management of the entity or have not entered into a written agreement to be liable for the actions of the entity's agents) who are in a position to make or influence referrals must be offered the investment on the same terms as those passive investors who are not in such a position.

(iii) The terms of the investment offer must not be related to the previous or expected volume of referrals, items or services furnished, or the amount of business otherwise generated from that investor to the entity.

(iv) There must be no requirement that a passive investor make referrals to, furnish items or services to, or otherwise generate business for the entity as a condition for remaining an investor.

(v) The marketing must be the same for passive investors as for non-investors.

(vi) No more than 40 percent of the gross revenue of the entity in the previous fiscal year or twelve-(12) month period may come from referrals or business otherwise generated from investors.

(vii) The entity must not loan funds to or guarantee a loan for an investor who can make or influence referrals, if the investor uses the loan to obtain the investment interest.

(viii) The return on investment must be directly proportional to the investor's investment in the entity.

The most difficult of these rules are the first and sixth. A "captive" health care service that exists only through referrals from its owners will not be within the safe harbor. An entity

that can demonstrate good faith marketing and expansion efforts may not be treated too harshly. The comments section to the regulations state that it is "highly unlikely" the Office of Inspector General ("OIG") will investigate the 60 - 40 percent investment standard if the joint venture can document good faith efforts to reach compliance with the 60 - 40 standard. The comments further state that, generally, as to pre-existing arrangements that do not comply fully with a particular safe harbor provision and are working with diligence and good faith to restructure it so that it does comply, the OIG will use discretion to be fair to the parties.

All joint ventures involving physicians or other potential referral sources should be reexamined in light of the new safe harbor regulations. Most will require some restructuring to comply with the safe harbors or, at least come closer to compliance. In some cases where full compliance is not possible, some investors will decide to sell their interests. There have already been reports of this occurring elsewhere. In fact, at least one company is advertising its services as a broker of such interests.

Space Rental

If renting space to or from a potential referral source the safe harbor requires that the following five elements be met:

1. There must be a signed written lease agreement.
2. The lease must specify the premises covered by the lease.
3. If for periodic time intervals rather than full time, the lease must specify the interval schedules, their precise length, and the exact rent for such intervals.
4. The lease term must be not less than one year.
5. Aggregate rent must be set in advance, must be consistent with fair market value, and cannot take into account the value of referrals if payment would be made under Medicare or a state health care program.

This particular safe harbor is basically con-

sistent with general good business practices and compliance should not be a burden. It will be important that leases be kept up to date and be on at least a one-year term basis. One major potential trap here is valuation. If the OIG thinks the rental rate is higher or lower than it should be it may conclude that this is a disguised kickback. Therefore, it may be important to have current appraisals supporting your determination of the fair market value rental rate. Also, keep in mind that in deciding what the fair market value is, proximity to the referral source cannot be taken into account.

Equipment Rental

The five elements of the space rental also apply to equipment rentals. Accordingly, it will be important to keep equipment contracts complete and up to date. On larger pieces of equipment, it may also be helpful to have appraisals.

Personal Services and Management Contracts

Payments made by a principal to an agent as compensation for the services of the agent will not violate the rules if all six elements are met. The first five elements are identical to those for the space rental safe harbor. A sixth element is added which requires that the services not involve the counseling or promotion of a business arrangement or other activity that violates any state or federal law.

Similar to the space rental and equipment rental safe harbors discussed above, in large part, these elements simply are good business practice. Physicians using independent contractors should ensure that they have written up to date contracts that meet the requirements of this safe harbor.

Sales of Practices

Any payment made by a practitioner to another practitioner for the purchase of a practice will not violate the rules if the following two elements are met:

1. The period from the date of the first agreement pertaining to the sale to the completion of the sale is not more than

one year; and

2. The selling practitioner will not be in a professional position to make referrals to, or otherwise generate business for the purchasing practitioner after the one-year period referred to in (1) above.

This safe harbor will have significant impact on how physicians sell their practices. In the past, it has been common, for tax and financial reasons, for selling physicians to agree to consult with the purchasing physician for a period of years after the sale. Apart from the tax and financial reasons, this also can make good business sense, from the standpoint of a smoother and easier transition of the practice. Nevertheless, the OIG is concerned that, in many cases, physicians (and hospitals) are really purchasing an ongoing stream of referrals from the selling physician. Therefore, this safe harbor is very restrictive.

Employees

Amounts paid by an employer to an employee who has a bona fide employment relationship with the employer, for employment in the furnishing of any item or service will not violate the rules. This safe harbor is broad and easily met for bona fide employees. However, this safe harbor is not available for independent contractors (who nevertheless may fall within the separate safe harbor for personal service and management contracts).

Other Safe Harbors

Other safe harbors are now available for warranties, discounts, group purchasing organizations and waiver of beneficiary co-insurance

and deductible amounts. Other proposed safe harbors include cross-referral arrangements (e.g. among practitioners within a group practice or between a primary care practitioner and a specialist), referrals between parent and subsidiary entities, group practice sales, physician recruitment activities, hospital subsidies of physician malpractice premiums and HMOs, PPOs and other managed care plans.

CONCLUSION

The Medicare fraud and abuse statute is an extremely broad and vague statute. The new safe harbor regulations shed a small amount of light on this uncertain area but also raise new questions and concerns. Existing and new joint ventures, business arrangements and referral arrangements should be reviewed in light of the new regulations. If possible, transactions should be restructured to fit within the new safe harbors. In many cases, transactions will not fit within the safe harbors and difficult decisions will have to be made about whether to accept the risk of an audit and the possible penalties that may result or whether to dispose of the interest, perhaps at a reduced price. Physicians should consult with legal counsel experienced in Medicare fraud and abuse matters in making such difficult decisions. Physicians can also expect new rules in the future that will further affect this decision making process. □

David W. Ball is a member of Dobson & Dobson, Attorneys at Law, P.A., in its Greenville, South Carolina office. He practices primarily tax, health care, and corporate law.

MEDICINE IN 1992: PAST, PRESENT AND FUTURE*

CHARLES S. BRYAN, M. D.**

My assigned title offers great latitude. What follows should be taken as only one person's response to three questions: (1) Where have we been? (2) Where are we now? (3) Where are we going? Archimedes (287 to 212 B.C.) said that he could move the world if only shown an appropriate place to stand. Each of us is limited by where we happen to stand: in my case, as a 50-year-old internist based at a teaching hospital in Columbia, South Carolina, the city of my birth. I sometimes think that my professional life began to take shape 50 years prior to my birth, for in 1892 there occurred two significant events—one celebrated by the world at large, the other a more private matter here in South Carolina.

Where have we been?

The first event of 1892 was the publication of William Osler's *The Principles of Practice of Medicine*. Osler's textbook quickly became the standard throughout the English speaking world and came to symbolize the beginning of what we now call "modern medicine." The second event was the recommendation by a Mrs. David Flenniken that a hospital be established in Columbia, South Carolina. This was the Columbia Hospital, now Richland Memorial Hospital—one of what is now a network of fine teaching hospitals in our state and representative of the role of hospitals in today's health care system. Let us examine these events in greater detail.

First, Osler's textbook (Figure 1). The story of its writing has been told many times.¹ To understand its impact, we must appreciate something about the development of

THE PRINCIPLES AND PRACTICE OF MEDICINE

DESIGNED FOR THE USE OF
PRACTITIONERS AND STUDENTS OF MEDICINE

BY

WILLIAM OSLER, M.D.

FELLOW OF THE ROYAL COLLEGE OF PHYSICIANS, LONDON
PROFESSOR OF MEDICINE IN THE JOHNS HOPKINS UNIVERSITY AND
PHYSICIAN-IN-CHIEF TO THE JOHNS HOPKINS HOSPITAL, BALTIMORE
FORMERLY PROFESSOR OF THE INSTITUTES OF MEDICINE, MCGILL UNIVERSITY, MONTREAL
AND PROFESSOR OF CLINICAL MEDICINE
IN THE UNIVERSITY OF PENNSYLVANIA, PHILADELPHIA

NEW YORK
D. APPLETON AND COMPANY
1892

Figure 1. William Osler's 1892 textbook of medicine suggested the promise of the new science not only to physicians but also to the general public.

medicine in the United States. In England and Europe, medical practitioners—that is, physicians who did not practice surgery—had enjoyed relatively high esteem for centuries. Surgeons, on the other hand, fought for recognition. The opposite occurred in the United States, perhaps because of Americans' pragmatic, egalitarian, can-do attitudes. In the 19th century, American contributions to medicine—such as those by South Carolina's J. Marion Sims—were largely in surgery. In January 1892, the month William Osler completed his textbook in Baltimore and sent it to the publisher, a New York internist lamented: "The wonderful achievements and rapid

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**Address correspondence to Dr. Bryan at 2 Richland Medical Park, Suite 502, Columbia, SC 29203.

advances of modern surgery are manifest It is not so in medicine, more particularly in the therapeutics of chronic disease."²

William Osler offered no new therapies. Indeed, he was something of a therapeutic nihilist, skeptical of his day's remedies. However, his textbook inspired a generation. It held the promise that the new bacteriology, chemistry, and pathophysiology might someday provide cures. It converted a Baptist minister—Frederick T. Gates—into "the greatest lay supporter of scientific medicine of all time."³ Gates happened to be an advisor to John D. Rockefeller on philanthropic matters, and eventual results included not only the Rockefeller Institute for Medical Research but also, through the Rockefeller Foundation's General Education Board, generous grants to upgrade the nation's medical schools.⁴ Medical schools—at least those that survived the Flexner report of 1910—flourished as never before. The Rockefeller grants fueled the growth of full-time faculties. After World War II, Federal funding dramatically accelerated the growth of full-time faculties. Faculty members were expected to excel not only at teaching and patient care but also at research. The net result was the full-scale academic medical center, the "mecca," with its university hospital and its huge faculty supported by NIH funding. Many of today's 126 medical schools follow this model.

Let us now turn to the lesser known event of 1892—the founding of the Columbia Hospital (Figure 2). On April 25, 1892, Mrs. Flenniken moved that the United King's Daughters—an organization with \$6.00 in its treasury—"undertake the building of a hospital in Columbia." This decision was, I think, also representative of a movement.

In 1875, there were only 661 hospitals in the United States, and by 1900 there were only 2,070.⁵ Hospitals were, in fact, designed and built largely for indigents who had no place else to receive care. Surgery was commonly done in the home. Often, doors would be taken from their hinges and used as operating tables. Although many patients were



Figure 2. The Columbia Hospital (shown here in 1895) was representative of a movement taking place across the United States.

reluctant to enter the hospital, care of acutely ill patients within the hospital soon became the norm. By 1910, hospitals became central not only to patients expecting quality care but also to physicians with high career ambitions.⁶ The successive administrations of the Columbia Hospital reflect, in microcosm, certain tensions in hospital governance. At first, the Columbia Hospital was governed by the Ladies Hospital Association. Finding its administration too demanding, this organization turned control of the 70-bed hospital over to a staff of 26 physicians in 1909. For 12 years, physicians governed the institution. In the history of the Columbia Hospital, it is noted:

Doctors are not given to publicity, and little has been gleaned about this period, except the apparent fact that the doctors were not richly gifted in management, and the hospital soon ran deeply in debt. They demonstrated an ability to get along with their patients better than with each other.⁷

In 1921, responsibility was turned over to Richland County, where it has remained. These events of the early 20th century reflect inherent tensions in the working relationships of laity, physicians, and trained administrators in hospital governance. Nevertheless, these events also reflect the rising institutional importance of the hospital—something we

now take quite for granted.

Where are we now—in 1992?

The horizon for medical science has never been brighter but the horizon for the medical profession is clouded with uncertainty. We are heirs to three trends traceable to a large extent to the 1960s.

First, the medical industrial complex. It began with large infusions of Federal monies (mainly through the NIH) especially during the Johnson administration. Many breakthroughs were made in American medical schools, whose faculties had multiplied almost exponentially since World War II. More recent advances reflect an international flavor and many originate in private industry. Medical science has become big business.

Second, increased Federal subsidization of medical care beginning with the Medicare legislation of 1966. Prior to Medicare and Medicaid, physicians generally practiced medicine through fee-for-service arrangements that allowed leeway for dispensation of social justice. Wealthy patients might be charged relatively high fees, while indigent or elderly patients might be charged less, not charged at all, or their bills dismissed for payment-in-kind. The new government subsidizations brought better reimbursements to many physicians and perhaps made "charity care" less fashionable. Increasingly, the public viewed medical care as a right. Increasingly, the technology of medical care became more sophisticated and expensive. Hence, the upward cost spiral.

The third trend followed logically: the beginning (again, during the 1960s) of serious public questioning of the cost effectiveness of so much support for health care. Lyndon B. Johnson is said to have asked top NIH administrators: "All right, with all of the money I gave you last year, what diseases can you now cure?" Johnson was not especially interested in the histochemistry of the pineal gland or the electron transport chain in the polymorphonuclear leukocyte. The historian Charles Rosenberg points out that it was during the

late 1960s that the American hospital enterprise also came to be seriously questioned:

Depending on the critic's temperament, politics and pocketbook, the hospital is a source of uncontrolled inflationary pressure, or an impersonal monolith, managing in its several ways to dehumanize rich and poor at once if not alike. At the same time it seems to many to be the stronghold of a profession obsessed with income, status, and prerogative, and little concerned with needs which cannot be measured, probed, or radiated. Analysts choose among this smorgasbord of criticisms; some find all to their liking, others emphasize one theme or another. But few concerned Americans fail to find some fault with the social role and internal order of the American hospital.⁶

And so where are we today? Even the most visionary cannot predict where the new biology and the new technology will take us. Organ transplantations of every kind, gene replacements, laser endoscopic therapy, and other technologies hold the potential to prolong life and to enhance its quality as dramatically as did the introductions of anesthesia, insulin, and penicillin. Can any field of human endeavor be more vibrant or exciting than medicine? On the other hand, even the most optimistic among us must concede that we cannot keep going in the same direction—if for economic reasons alone. We are reminded all too frequently that health care now consumes at least 12 percent of the gross national product of the United States—and rising. One congressman asked staffers to determine when, based on current rates of rise, the lines representing our gross national product and the percentage of the gross national product consumed by health care would intersect. The answer: the year 2065 A.D. In the year 2065, at the current rates of growth, health care will consume the entire American economy. Something must give. National health care policy is likely to remain a political campaign issue for years to come. All have a stake: the public, the health care

industry, business, labor, and of course, government. Can these forces come together and somehow forge a solution? At this time, there appear to be three possible scenarios for this, the last decade of the 20th century.⁸

In the first scenario, nobody agrees what must be done. Those who propose solutions will continue to posture like the mice in the proverbial story, "Belling the Cat." The potential cat-bellers cannot reach consensus. More specifically, the high Federal deficit and the standoff between the executive and legislative branches will preclude a sweeping solution from Washington. Adjustments will be relatively minor, and the public will continue to complain about rising health care costs.

In the second scenario, a two-tiered health care delivery system will emerge under what is being described as "universal access to basic health care services." Such a system would replace Medicaid for the underinsured and would provide for the uninsured. Such a system would not be without its labor pains—which would involve mainly the definition of "basic health care services." Health care over and above that defined as having a reasonable probability of enhancing both the quantity and quality of life would be considered a luxury, not a right, and the burden of its financing would devolve on private insurers, not the government.

In the third scenario, universal health insurance will become a reality. Universal health insurance would inevitably be carried out by Federal mandate and specifications. Universal health insurance would most likely depend upon the successful outcome of a presidential campaign conducted with health care financing as the centerpiece political issue. The crucial problem is whether the country can really afford it.

Where are we going?

Much will depend on which of the above scenarios prevails. But returning to my earlier theme—the significance of those two events of 1892—I see three ways by which we, the

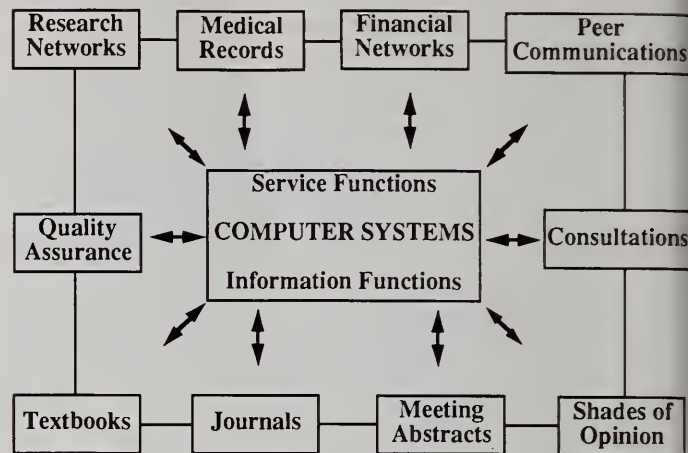


Figure 3. Computer-based information systems should not only provide educational and service functions but should also integrate these functions.

members of the medical profession, can at least influence our collective destiny.

First, we must make optimum use of information technology—more specifically, of computer technology (Figure 3). The publication of William Osler's textbook of medicine a century ago came to symbolize the excitement and promise of medicine. It also prompted generations of physicians, and more specifically internists such as myself, to try to learn all that we could about medicine, to aspire toward near-encyclopedic knowledge. Indeed, a criticism of my own discipline, internal medicine, is that it came to be perceived as an "elite form of generalism" defined to a large extent by its knowledge base.⁹ Computer technology holds the potential to make not only internal medicine but also medicine in general a much kinder, gentler, user-friendly profession.

Computers will, within the next several decades, come to dominate nearly every phase of medical information systems. As one writer recently put it:

In (the year) 2021 computers will collect histories (perhaps directly via speech recognition programs) together with the results of physical examination and special investigations. They will suggest diagnoses and therapy, taking into account previous experience and the existing state-of-the-art. Networking

will allow rapid recognition of epidemics, identification of new syndromes, audit of treatment, and assessment of side effects. With the aid of massive molecular genetic databanks, we shall be able to recognize thousands of new genetic syndromes. . . Interactions of drugs, with each other or with genetic abnormalities, will be detected by pattern recognition software.

How will the medical profession come to terms with such a doctor's dystopia? Politicians, patients, and patients' pressure groups will demand improved medical audit; increased litigation will result in ever more defense medicine; and failure to use a computer will be a *prima facie* evidence of malpractice. The output of the diagnostic programs, which will be used in every consultation, will be fed back to improve audit.¹⁰

We can expect that computers will largely replace textbooks. We will be able to access a computer databank at any desired level of sophistication: basic textbook knowledge; published peer-review journal literature; hot-off-the-press meeting abstracts; and even shades-of-opinion among experts. My hope is that computers will enable most physicians to participate in applied medical research. A medical student said recently: "I'd like for all of my patients to be included in some kind of study." By simply including one's patient records in computer network systems (assuring patient anonymity, of course), it should be possible to obtain better answers to common problems.

Second, we must define more clearly—for everyone's benefit—our relationship to various corporate structures and specifically to our hospitals (Figure 4). By no means do I suggest that the era of fee-for-service medical practice is drawing to its end, as some would-be prophets of doom now predict. Nevertheless, these words written ten years ago by the sociologist Paul Starr still ring true:

Unless there is a radical turnabout in economic conditions and American politics, the last decades of the twentieth cen-

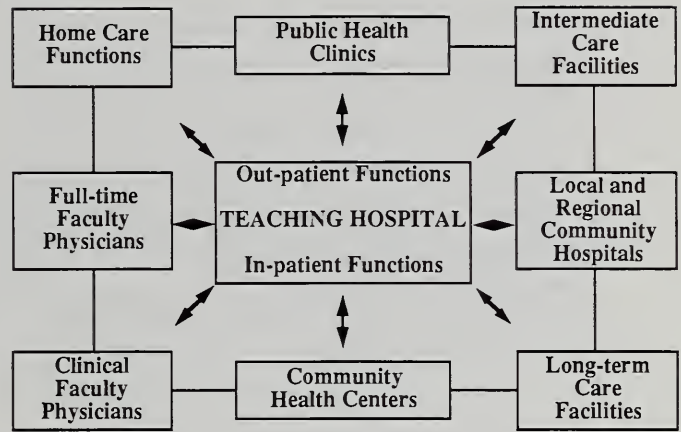


Figure 4. To an increasing extent, the teaching hospital (or regional medical center) will be the keystone of a complex yet integrated health care delivery network.

tury are likely to be a time of diminishing resources and autonomy for many physicians, voluntary hospitals, and medical schools. Two immediate circumstances cast a shadow over their future: the rapidly increasing supply of physicians and the continued search by government and employers for control over the growth of medical expenditures. These developments promise to create severe strains throughout the medical system. They may prepare the way, moreover, for the acceleration of a third development, the rise of corporate enterprise in health services, which is already having a profound impact on the ethos and politics of medical care as well as its institutions.

Starr called our era "the coming of the corporation."

The introduction of Medicare and Medicaid—more than any other factor—transformed hospitals from their historic role as predominantly charitable institutions into profitable businesses. Today, as these businesses grapple with new sets of issues, we find hospitals expanding into new areas: ambulatory care clinics, home health services, physician group practices, to name a few. As a result, hospitals and physicians can be collaborators or competitors depending upon one's vantage point. Throughout the United States, physicians are beginning to

turn to hospitals with the request: "Please, run the business aspects of our practices for us." To an increasing extent, physicians and trustees relinquish control to trained administrators. To review the spectrum of corporate models would far exceed the scope of my presentation here, but suffice it to say, as two reviewers recently put it:

Clinicians have new responsibilities for developing collective arrangements for institutional governance, for allocating institutional resources, for providing public accountability regarding the use of these resources, and for defining the missions of care.¹²

Third and finally, we must be true to ourselves, to our collective calling to be physicians. Pessimists suggest that high technology, computer-based information systems, and megacorporations will drive us inexorably toward stranger medicine—medicine devoid of meaningful doctor-patient relationships. Pessimists also point out the extent to which many forces—government, third party payors, lawyers (both plaintiff and defense), auditors, ethicists, special interest groups, and an increasingly demanding public—will encroach upon the practice of medicine. However, optimists—which I trust includes most of us—rejoice in the principle that John Naisbitt called "high tech/high touch."¹³ That is, each technical advance must be offset by greater personal contact, by compassion, in order to meet vital human needs. I believe that here in South Carolina, the closeness and relatively small sizes of our institutions could well work to our advantage. I believe that here in South Carolina, we have at least as much opportunity as anyone to put together new and better ways to fulfill our ancient covenant with humanity: to serve.

I return once more to those events whose centennials we celebrate this year: William Osler's textbook and Mrs. Flenniken's call for a new hospital. Osler's greatest contribution was not his textbook or other writings but

rather his reconciliation of the traditional values of medical practice with the emerging new science. We remember Osler especially for his eloquent restatements of the Hippocratic ideal of "love of humanity associated with love of...craft!...philanthropia and philotechnia...."¹⁴ Mrs. Flenniken's precise motives for proposing a hospital for Columbia, South Carolina, are unrecorded. However, we suspect that she, too, would have agreed with the basic premise stated so clearly by Hippocrates: "Where there is love of humanity, there also is love of the art." □

REFERENCES

1. Golden RL. Osler's legacy: the centennial of *The Principles and Practice of Medicine*. *Ann Intern Med* 116: 255-260, 1992.
2. Van Valzah WW. A short study in the therapeutics of chronic disease. *JAMA* 18: 31-33, 1892.
3. Ludmerer KM: *Learning to Heal: The Development of American Medical Education* (New York: Basic Books, Inc., 1985), p. 4.
4. Fosdick RF: *The Story of the Rockefeller Foundation* (New York: Harper & Brothers, 1952), pp. 96-104.
5. Rosen G: *The Structure of American Medical Practice 1875- 1941* (Philadelphia: University of Pennsylvania Press, 1983), p. 46.
6. Rosenberg CE: Inward vision & outward glance: the shaping of the American hospital, 1880-1914. *Bull Hist Med* 53: 346-391, 1979.
7. Blackburn L, Padgett M: *History of Columbia Hospital 1892-1947* (Columbia: Columbia Hospital Alumnae Association, 1953), p. 12.
8. McMahon JA: The health care system in the year 2000: three scenarios. *Acad Med* 67: 1-7, 1992.
9. Stevens R: Issues for American internal medicine through the last century. *Ann Intern Med* 105: 592-602, 1986.
10. McManus IC: How will medical education change? *Lancet* 337: 1519-1521, 1991.
11. Starr S: *The Social Transformation of American Medicine* (New York: Basic Books, Inc., 1982), pp. 420-421.
12. Stoeckle JD, Reiser SJ: The corporate organization of hospital work: balancing professional and administrative responsibilities. *Ann Intern Med* 116: 407-413, 1992.
13. Nasibitt J: *Megatrends: Ten Directions Transforming Our Lives* (New York: Warner Books, Inc., 1982), pp. 39-53.
14. Osler W: *The Old Humanities and the New Science* (Boston and New York: Houghton Mifflin Company, 1920), p. 63.

Editorial

As the author indicates, the following guest editorial was inspired by one physician's attending the SCMA annual meeting for the first time as a delegate. He came away with a clear conviction: we need to take our case to the Public! Guest editorials reflect the opinions of the authors and do not necessarily reflect the opinions of the officers and trustees of the South Carolina Medical Association.

—CSB

DO DOCTORS CONTROL THE COST OF MEDICAL CARE?

During the recent annual meeting of the S.C. Medical Association, I had the privilege of attending for the first time as a delegate from my county. This was certainly an informative and eye-opening experience with regard to the workings of our medical association and its legislative body.

During one of the Thursday afternoon reference committee meetings, a resolution was introduced by Dr. Booth calling for withdrawal of SCMA support for the Houck bill. A lively discussion ensued, during which many interesting and valid opinions were shared. One of my colleagues, in responding to Dr. Booth, asked him if he had a workable solution to the cost concerns addressed in the Houck bill. "After all," he said, "doctors control the cost of medical care."

I do not recall much of what transpired for the rest of this reference committee meeting, for my thoughts were fixated on this statement. Certainly all of us have heard this before and perhaps many of us have been led to believe this. Do I, in fact, as a physician, control the costs of medical care? After much deliberation, my answer has been a resounding "No!"

In my day-to-day practice of medicine, I do not control medical costs any more than I control which patients become ill and subsequently need to see me. As a physician who employs rational evaluation and management guidelines, I initiate diagnostic and therapeutic

modalities that do cost money. However, I have virtually no control over whether a particular test or procedure costs \$5, \$500, or \$5,000. I find the following bit of information to be enlightening in this regard. At my own hospital, 43 percent of every hospital charge is related to cost shifting. In other words, if every uninsured and underinsured patient paid their fair share of medical costs, the average hospital bill could be reduced by 43 percent, with no loss of services or revenue to the hospital. Likewise, in my own practice, contractual adjustments and bad debt amount to nearly 40 percent of billings.

Having attempted to absolve myself and the medical profession from primary responsibility for medical costs, I do not intend to shirk my responsibility to my colleague who asked "What is your solution?" I believe that organized medicine at the county, state and national level needs to undertake a massive campaign to educate our patients and our society as well as our elected officials regarding the real reasons for the high cost of medical care. I have mentioned the first of these, which is cost shifting to compensate for those patients who pay less than their fair share. A second well-known reason is the practice of defensive medicine which pervades most aspects of medical care and has done so for the last decade. A third major contributor to our large overall medical budget is the unbridled use of high-tech and expensive care for

life-threatening conditions which occur in the first and last six weeks of the patient's life. Finally, we have several problems in this country which are either uniquely American or largely out of proportion in our country compared to others, namely, teenage pregnancy/lack of prenatal care, the rising AIDS epidemic, large incidence of drug, alcohol, and tobacco abuse, and violence. All of these consume billions of health care dollars on an annual basis. There are doubtless many other causes for the high cost of medicine which the reader may add to this list. Nevertheless, these causes are beyond the control of physicians without guidelines from our society and our legislative bodies.

Unfortunately, solutions which call for unilateral concessions from physicians and hospitals (for example, the Houck bill) do not address these issues. Even a Draconian payment reform plan which calls for a 50 percent reduction in total payments to physicians will reduce the annual health care budget by only 10 percent, while crippling the ability of physicians to stay in practice. This reduction would be outpaced on an annual basis by yearly growth in health care spending.

As physicians and as a society, we need to be asking difficult questions. Will our society and legislative bodies agree to higher taxes to allow government programs to pay their "fair share" of the health care burden? Will our state and national legislators pave the way for substantial and meaningful tort reform? Will government and/or business provide health insurance to the currently uninsured popula-

tion who work but have no coverage? Will we as a society develop and accept prudent limitations regarding the timing and type of high-tech medical care to be administered in situations where the yield from such care is quite low? Can we solve our unique societal problems which consume a large percentage of health care resources in this country, particularly compared to the medical systems of countries like Canada, Great Britain and Germany?

Certainly all of us believe that physicians should be leaders in these discussions. It should be kept in mind, however, that we represent less than one percent of the total population. It is blatantly unfair to cast the blame on physicians and hospitals for the high cost of medical care and to legislate unilateral concessions from them. Such scapegoating does nothing to address the difficult questions posed above. Likewise, it represents an unjustified attempt to place the responsibility for the costs of medical care on the medical profession rather than within our democratic society where it rightfully belongs. Unless we as physicians begin immediately to educate our patients regarding the true causes for the cost of health care, we can expect our legislators and policy makers to continue the anathema of "doctors control the cost of health care."

David B. Kee, Jr., M. D.
921 Medical Plaza
Myrtle Beach, SC 29572

Letters to the Editor

Dr. William S. Houck, Jr., a retired surgeon who now represents his district (63, Florence County) in the state legislature, introduced a bill this year which caused a great deal of controversy among physicians. In the letter below, he explains his intentions. Although one may or may not agree with the provisions and rationale of Dr. Houck's bill, we should all thank him for his willingness to serve in this capacity. More physicians must enter the political arena!

— CSB

To the Editor:

I am writing you in hopes that you will consider publishing this letter so that the members of the South Carolina Medical Association will have an understanding of my intentions when I introduced House Bill 4244.

It is my sincere feeling that if the present system of health care delivery is allowed to continue its course, it will self-destruct, and if allowed to be remedied from Washington, there will be a systematic demise of what we as providers know is an excellent health care delivery system. The American populace receives the best in health care. No one else in the world receives the high quality health care that we in America do. The problem, however, is that it costs too much.

As a practicing surgeon for some 25 years, I tried to practice abiding by the basic principles of medicine, and that is "to do no harm." That was my intention in formulating my health care bill. As we all know, any change in a professional system brings anxiety and argument. But for one to assume that change is not needed, one has to be capricious and irresponsible. Change has to occur in the health care system and this must be achieved through compromise among all providers. We are all in the system together, and we all should try to maintain the best in the system as it exists now. My proposed rate control system was, in my opinion, a middle of the road approach. It was introduced to address the two major problems as I see it in the health care field. That is cost containment and accessibility. Without these two modalities, implementation of health care reform

would be futile.

The South Carolina Medical Association took a bold step in supporting my bill. This decision was not an easy one, but the leadership of the association is to be commended in taking a lead and demonstrating that they are ready to alleviate some of the health care problems that exist in our state. They realized something needed to be done cost wise, and provided leadership. With their decision, they were in hopes that other providers would follow in a similar path. After all, physicians account for only 15 to 20 percent of the total health care costs while hospitals account for some 45 to 50 percent of the total health care costs.

South Carolina has 550,000 people who do not have health insurance. This number increased by 200,000 in the past 12 months. This number is approximately 20 percent of the total population of South Carolina, and some two-thirds of the number are employed. In the United States, there are some 30 to 40 million people who do not have health insurance, and this surprisingly is 17 percent of our total population. South Carolina is, therefore, not a model state as some would like us to think. We can do better by making health care more affordable and more accessible. Affordability and accessibility are inseparable in health care. This is particularly evident when one considers the number of patients who do not visit their physicians because of ever-increasing insurance deductibles and co-payment requirements.

Many physicians have found numerous faults with my bill. I wonder, however, if they

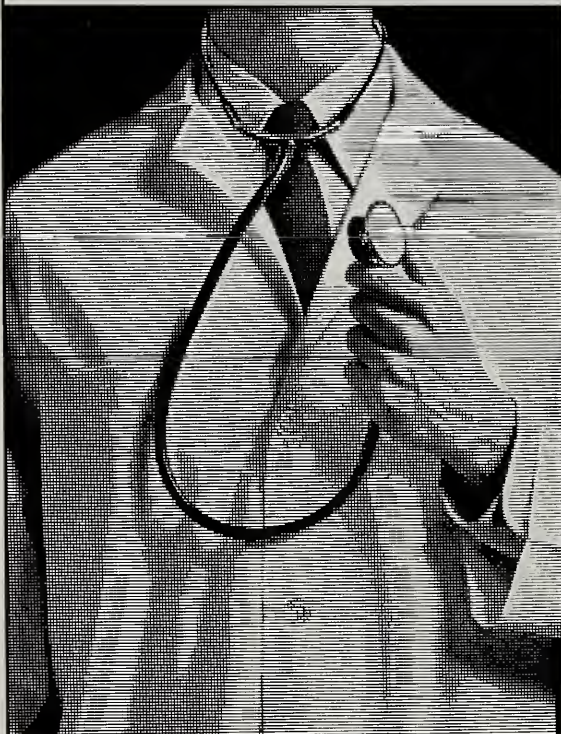
have examined other proposals. The Hospital Association of South Carolina has offered a proposal which they call "a model for health care reform in South Carolina." They speak in terms of "organized care systems" or "networks" scattered throughout the state. These "networks" are budgeted on a fixed dollar, and provider payments are made through negotiations and capitations. When these terms enter the picture, it means socialized medicine. The Hospital Association has done a wonderful job of spreading their impressions of my bill throughout the state. They have adopted many points of my plan in their proposal. However, one important and significant portion that they have summarily omitted concerns accountability. As noted in the February 24, 1992 issue of *US News and World Report*, accountability is inseparable and a *sine qua non* of health reform. Without

this vital element, we cannot expect any meaningful improvement.

It is my sincere hope that we can adopt a plan of health care reform in South Carolina. As I said in the summer of 1991, it will require input from everyone and compromise by everyone in the health care system. I still adhere to that premise, and I welcome any advice and guidance that is well intended. I strongly feel, however, for any worthwhile legislation to be promulgated, meaningful cost containment and accountability in the system must be an integral part of the plan.

William S. Houck, Jr., M. D.
House of Representatives
State of South Carolina
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On the Cover:

LELAND OSGOOD MAULDIN

1878-1932

PRESIDENT, SCMA, 1924

L.O. Mauldin was born in Pickens, S.C., on May 10, 1878. His early education was at Pickens Court House, and he earned his B.S. at Clemson Agricultural College. After graduating from the Medical College of the State of South Carolina in 1903, he practiced general medicine in his hometown for a brief period before proceeding to Washington, D.C., where he served as Medical Examiner for the Bureau of Pensions and began his study of what would be his medical specialty, Eye, Ear, Nose and Throat. Upon completion of his postgraduate work in this field in London and Vienna, in 1906, he returned to Greenville, where he practiced for the rest of his life.

One of his best known accomplishments was the perfection of his individual method of tying off the bleeding vessels in the tonsil fossa using his fingers which he called nature's best instruments.

Dr. Mauldin was a civic minded physician—a member of the Presbyterian Church, a Mason and a Rotarian. He was very active in organized medicine both in South Carolina and nationally, belonging to the Greenville County Medical Society; the American, Southern, and the Tri-State Medical Associations; the American Academy of Ophthalmol-

ogy, and the American College of Surgeons. His President's Address given upon retiring from the chair of the SCMA was entitled "The Physician's Spirit of Service." In it he says:

The doctor who renders the best service is the nearest approach to the ideal doctor. He is a christian gentleman, well learned in his profession and skilled in the practice of it, a student and a diplomat, a judicious charger and a good collector, he knows no strangers, he knows when to say "Yes" and when to say "No."... He is not too busy to take his needed recreation and not so idle as to be a loafer.... He is reserved, but not so modest as to allow his rights to go unprotected.... He is clean in his thoughts and refined in his manner and his promise is as dependable as truth itself, and his service is the best that is within his power to render.

Dr. Mauldin died of heart disease following influenza on May 6, 1932, at the height of his career.

Betty Newsom
The Waring Historical Library



Auxiliary Page

1991-92 SCHOLARSHIP AWARD WINNERS

It was the pleasure of SCMA Auxiliary and SCIMER Scholarship Committees to award \$1,000.00 scholarships to six students from the University of South Carolina School of Medicine and six from the Medical University of South Carolina.

Selection for the award is determined by financial need, academic standing, extracurricular involvement and interpersonal skills. All of the 27 students who were interviewed had outstanding records of accomplishments.

Dr. Eloise Bradham, Chairman of SCIMER and Virginia Johnson, President of SCMAA, presented the awards at the House of Delegates meeting on Sunday, May 3rd, in Charleston.

Winners of the 1991-1992 SCMAA-SCIMER Scholarships from the USC School of Medicine are Rhonda Sue Todd, Laurens, S.C.; Kristin Kirk Burleson, Columbia, S.C.; James Robert Wharton, Columbia, S.C.; Troy Williamson Privette, Hartsville, S.C.; Bradley W. Boatman, Columbia, S.C.; and Christopher M. McManus, Prosperity, S.C.

Medical University of South Carolina recipients of 1991-1992 SCMAA-SCIMER Scholarships are Jeffrey Scott Lackey, Myrtle Beach, S.C.; Gregory Scott Mencken, Charleston, S.C.; Kristen Marie Clontz, Surfside Beach, S.C.; Stephen Randell Ridgeway, Laurens, S.C.; Adam Paul Barta, Toronto, Canada; and Robert Everard Blackwell, Fort Mill, S.C.

Scholarships were also given by Spartanburg Cardiovascular Consultants to Bennie Martin Fulbright from MUSC and Todd C. Walter, Jr., from USC School of Medicine. Aurelia Cunningham Watson received the Bamberg County Stuckey Memorial Scholarship, Dawn Vincent Sutton the Conway Hospital Medical Staff Scholarship and John C. R. Sims won the SCIMER Essay Scholarship Award.

Mrs. E. E. Kimbrough (Jeanette)
Scholarship Chairman



President's Page

THE ISSUE FOR THE NINETIES

Reform of the American health care system is the **ISSUE** for the nineties. It is an issue that affects every doctor in this country.

At the present time, there is great debate and many different health care proposals. Congress has over 50 with Representative Bob Michel's most resembling that of the AMA, "Health Access America." At the Forum on health care reform held at the recent annual meeting of the AMA, we learned that all countries are not totally happy with their health care plans. Representative Pete Stark does not feel that there will be Federal legislation this year.

Vermont, Minnesota, Maryland, Hawaii and Oregon have statewide plans. Your South Carolina Medical Association is working with the South Carolina Hospital Association to develop a statewide plan for South Carolina. The California Medical Association is sponsoring a plan which is on the November ballot in California.

The ASIM and the AAFP have their individual proposals.

It is to the individual doctor's advantage to acquaint himself or herself with these various proposals and be a part of the ongoing debate. There will be no simple or quick solutions, and we must, as the only true advocate for the patient, keep the patient at the center.

We will always have the poor with us, and no health care plan that is reasonable and cost effective can take care of every individual patient in this great country of ours. The AMA does a tremendous job of guiding health policy in the proper direction and deserves your unqualified support.

A handwritten signature in cursive script that reads "Bartolo M. Barone, M.D.".

Bartolo M. Barone, M. D.
President

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SCMA, P.O. Box 11188
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RECENT CLUES TO THE PATHOGENESIS OF SPONDYLOARTHROPATHIES*

FRANK C. ARNETT, M. D.**

Increasingly, the applications of modern molecular biology and novel clinical observations are providing new insights into the pathogenesises of the spondyloarthropathies. The concept has been well-established, especially for Reiter's disease, that microbes infecting the gastrointestinal or genitourinary tracts can trigger a reactive arthritis in the genetically susceptible host.¹ Many of the inciting organisms have been identified, and genetic susceptibility has been associated with the major histocompatibility complex (MHC) class I antigen, HLA-B27.¹ It is likely that reactive arthritis will serve as a paradigm for ankylosing spondylitis, psoriatic arthritis and enteropathic arthropathies, although there will likely be variations in the causative organisms, as well as differences in predisposing HLA class I antigens, especially for psoriatic disease.

What then are the important new developments which can better focus our research efforts?

*This is the second in a series of four articles on basic advances, edited by E. Carwile LeRoy, M. D.

**Address correspondence to Dr. Arnett at the Division of Rheumatology and Immunogenetics, PO Box 20708, Houston, TX 77225.

MICROBIAL ANTIGENS ARE PRESENT IN THE JOINTS OF PATIENTS WITH REACTIVE ARTHRITIS.

Reactive arthritis previously has been considered a sterile, probably immunologically-mediated, inflammatory response occurring as a consequence of an infection distant from the joint. Recently it has been shown convincingly that antigens from the triggering microbe are present in synovial phagocytic cells. *Chlamydia trachomatis*,^{2,3} *Yersinia enterocolitica*,⁴ and *Salmonella typhimurium*⁵ antigens each have been identified in their respective reactive arthritides by the use of fluorescent monoclonal antibodies, electron microscopy and/or molecular probes. Attempts to culture organisms from the joints, as well as several attempts using polymerase chain reaction to detect bacterial DNA, have proven negative, suggesting that viable organisms are not present. Thus, reactive arthritis is not in the strictest definition "sterile." On the other hand, it cannot be considered a truly "septic" arthritis either.

Several questions arise from these observations. First, how do bacterial antigens get from the primary site of infection to the joints? The answer is at this time unknown, but it seems likely that they are carried by the

bloodstream and are deposited with some degree of tropism in selected joints and entheses characteristic of Reiter's disease. Moreover, might these same bacterial products be found in the extra-articular lesions, such as the anterior chamber of the eye (uveitis), skin (keratoderma), and aortic valve and/or root?

Second, why does the articular inflammation persist for such long periods of time in some individuals? When true septic arthritis is successfully treated with antibiotics, synovitis usually resolves completely after several weeks despite presumably a large load of phagocytosed bacterial antigens in the joint. Is it possible that antigens continue to be shed to these same joints or that there is a failure to degrade and eliminate them. There is little question that the antigens can be found for long periods in some individuals; the study by Granfors et al⁴ found *Yersinia* antigens still present in two patients with active arthritis three and 10 years, respectively, after the inciting *Yersinia* enteritis.

Another important observation may shed some light on these questions.

THERE IS A PERSISTENT IgA RESPONSE TO THE INITIATING ORGANISM IN REACTIVE ARTHRITIS.

In patients infected with *Yersinia*, *Salmonella* or *Chlamydia* organisms, there is the usual early and transient IgM antibody response followed after several weeks by IgG and IgA antibodies to the offending organisms. In patients who develop reactive arthritis, however, the IgA response, including the secretory component, tends to persist for a longer period than expected, in fact for as long as the arthritis is active.⁶⁻⁸ These observations suggest that there is a need for ongoing mucosal immunity, presumably because of a persistent infection, even though the microorganism cannot be cultured from the stool or urethra by currently routine techniques. It has been found that *Yersinia enterocolitica* can persist asymptomatically in the gut, regional lymph

nodes, or throat despite seemingly adequate antibiotic therapy,⁹ and the refractory nature of *Chlamydia trachomatis* in the genitourinary tract is well-known. As an interesting aside, IgA nephropathy is being increasingly recognized as a complication of the spondyloarthropathies. One could speculate that the same IgA antibodies to the organism inciting the arthritis might cause the renal lesions; however, studies directed to that question remain to be performed.

LONG-TERM THERAPY WITH TETRACYCLINE SHORTENS THE DURATION OF CHLAMYDIA-INDUCED REACTIVE ARTHRITIS.

A recent double-blind, placebo controlled trial of a three-month trial of tetracycline in reactive arthritis demonstrated a significantly shorter and less destructive disease course in patients whose arthritis was caused by *Chlamydia trachomatis*, as compared to those whose disease had been induced by enteric pathogens.⁹ Interestingly, *Chlamydia* could still be cultured from the throat in two patients after only two weeks of antibiotic therapy, the usual time period recommended for therapy of this organism. This provocative study lends additional support to the theory that there is an ongoing nidus of infection in patients with ongoing reactive arthritis. Further evidence comes from the proven efficacy of sulfasalazine in some cases of both reactive arthritis and ankylosing spondylitis, although non-antimicrobial therapeutic effects of both of these antibiotics remain possible.¹⁰

These recent observations already have potential clinical application. They suggest that attempts should be made to identify the organism triggering reactive arthritis in individual patients. The finding of positive urethral smears and/or cultures, and perhaps serum antibodies (especially IgM and/or IgA), for *Chlamydia trachomatis* should prompt consideration of a prolonged therapeutic trial of a tetracycline. Stool cultures for the known enteric pathogens are notoriously

futile; however, a panel of serum antibodies, including IgA, attempting to define the organism, might prove useful. Alternatively, an empirical trial of sulfasalazine or another broad spectrum antibiotic, such as one of the new quinolones, might be indicated.

TRANSGENIC RATS POSSESSING HUMAN HLA-B27 SPONTANEOUSLY DEVELOP DISEASE RESEMBLING SPONDYLOARTHROPATHY.

The association of HLA-B27 with reactive arthritis and ankylosing spondylitis remains the ultimate clue to disease pathogenesis. There have been several recent important developments.

The successful transfection and expression of HLA-B27 along with β 2microglobulin in several strains of rats is a major technological advance.¹¹ Most importantly, these animals spontaneously develop colitis followed by arthritis, enthesitis, psoriasisiform skin and nail lesions, genitourinary inflammation, and perhaps uveitis. Control rats transfected with and expressing another human MHC class I gene (HLA-A2) have not developed illness as of the time of this writing (Personal Communication: Joel Taurog, M.D.). No pathogenic bacteria have been found in the HLA-B27 transgenic rat thus far; however, the animals' gut flora remains the most promising source for a triggering organism.

Thus, these observations provide the first direct evidence that HLA-B27 itself, rather than another closely-linked gene, is responsible for disease. Since the function of HLA Class I molecules is to present antigens, albeit usually self, tumor or viral peptides, to cytotoxic T lymphocytes, it seems reasonable to assume that this type of immune function is playing a role in the pathogenesis of spondyloarthropathies. Moreover, if a normal gut organism is found to cause the disease in this animal model, it might provide a clue to the as yet unidentified but presumed pathogen responsible for human ankylosing spondylitis.

DOES MOLECULAR MIMICRY PLAY A ROLE IN THE SPONDYLOARTHROPATHIES?

Molecular mimicry between HLA molecules and infectious agents has long been proposed as a possible mechanism to explain HLA and disease associations.¹² Theoretically, mimicry could result in either of two possibilities: 1) lack of an appropriate immune response to a pathogen because it shared some of the same antigenic determinants as self HLA molecules, or 2) the elicitation of an immune response to a pathogen which cross-reacted with self-tissues, i.e. an autoimmune response. There is no lack of certitude that molecular mimicry exists. In the spondyloarthropathies, antibodies to several initiating bacteria have been shown to cross-react with HLA-B27, and vice-versa. The most compelling findings have been shared amino acid sequences between the polymorphic region of HLA-B27 and several bacteria, including *Klebsiella pneumoniae*¹³ and a plasmid found thus far only in arthritogenic strains of *Shigella flexneri*.¹⁴ Whether these examples of mimicry play any roles in disease pathogenesis, however, remains unclear. Multiple examples of nucleotide and/or amino acid sequences shared between microbes and human molecules are being found increasingly and their biological significance, if any, remains to be proven.

THE MOLECULAR STRUCTURE OF HLA-B27 HAS BEEN DEFINED.

Three human HLA-class I molecules, HLA-A2, Aw68 and B27, have now been crystallized and their three-dimensional structures thus defined (Figure 1).¹⁵⁻¹⁶ The polymorphic outermost domains (α 1 and α 2) of these cell surface molecules form an antigen-binding "groove" or "cleft" which can bind an antigen peptide of nine amino acids in length. The polymorphic residues within the antigen-binding groove result in the formation of various "pockets" which produce unique internal conformations for each HLA specificity. Thus, the internal architecture of each HLA

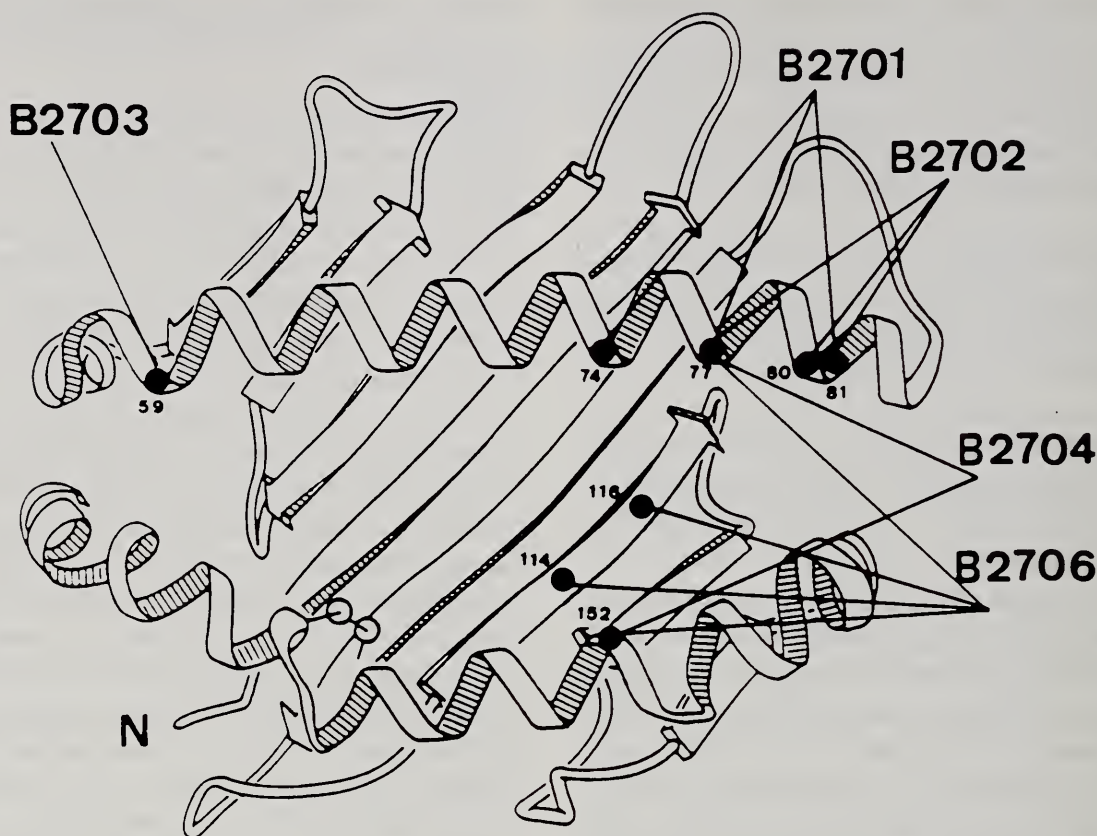


Figure 1. Schematic representation of the three-dimensional structure of HLA-B27 molecules.¹⁵ Amino acids which determine each of the B-27 subtypes are indicated in various regions of the peptide binding groove. Reprinted from Scandinavian J Rheumatol (Suppl 87), p 23, 1990, with permission.¹⁷

molecule is likely to be highly relevant to which specific antigenic peptides can “fit” and thus be presented to the T cell receptor on cytotoxic T cells in the initiation of a cellular immune response.

With the elucidation of the fine internal structure of HLA-B27, candidate peptides, especially those of microbial origin, which by virtue of their amino acid charges and conformations could bind with the B27 molecule, can now be pursued in a more directed fashion.

ONE HLA-B27 SUBTYPE MAY NOT PREDISPOSE TO SPONDYLOARTHROPATHIES.

There are at least seven different molecular subtypes of HLA-B27.¹⁷ While only two amino acids (*lysine* in position 70 and *asparagine* in position 97) determine HLA-B27 as unique from other HLA class I specificities, the subtypes of HLA-B27 show mul-

tiple polymorphisms in other areas (Figure 1). The most common subtypes of HLA-B27 all have been implicated in predisposing to disease. A recent study suggests, however, that one particular HLA-B27 subtype, *B2703, is not associated with spondyloarthropathies in Black Africans.¹⁸ If this preliminary observation can be confirmed, it could provide an important clue to the mechanism whereby the other HLA-B27 subtypes confer disease susceptibility. HLA-*B203 differs from the other B27 subtypes only at amino acid position 59, an area believed to be important in “anchoring” the peptide bound in the groove. It could be speculated that only *B2703 has the ability to anchor and thus appropriately present peptides relevant to certain infections, while the other B27 subtypes, being defective in this regard, confer a selective defect in cellular immunity to certain infectious agents. Earlier data by Inman *et al*¹⁹ have suggested such a selective defect in immune responsiveness

to *Salmonella* in reactive arthritis patients. Could such a selective immune deficit result in a failure to fully eradicate and/or contain selected organisms at their primary sites of infection (gut or GU tract) and allow dissemination of bacterial antigens to the joints and other tissues? Could the profound immunodeficiency of T helper cells conferred by the human immunodeficiency virus (HIV), along with acquisition of the appropriate infections, compound this selective loss of host defense in HLA-B27 positive individuals and thus explain the severe examples of Reiter's disease being reported in patients with acquired immune deficiency syndrome?²⁰

There have been many more questions raised by recent advances than have been answered. Nonetheless, these questions are now more sophisticated and are approachable by experimental methods. The tempo of recent advances and discoveries promises additional new insights soon into the pathogenesis of the spondyloarthropathies. □

REFERENCES

1. Arnett FC: The seronegative spondyloarthropathies. *Bull Rheum Dis* 37: 1-12, 1987.
2. Ishikawa H, Ohno O, Yamasaki K, Ikuta S, Hirohata K: Arthritis presumably caused by *Chlamydia* in Reiter's syndrome. *J Bone Joint Surg* 1986, 68-A: 777-779.
3. Keat A, Dixey J, Sonnex C, Thomas B, Osborn M, Taylor-Robinson D: *Chlamydia trachomatis* and reactive arthritis: the missing link. *Lancet* 1987, I:72-74.
4. Granfors K, Jalkanen S, von Essen R, Lahesmaa-Rantala R, Isomaki O, Pekkola-Heino K, Merilahti-Palo R, Saario R, Isomaki H, Toivanen A: *Yersinia* antigens in synovial fluid cells from patients with reactive arthritis. *N Engl J Med* 1989, 320:216-221.
5. Granfors K, Jalkanen S, Lindberg AA, Maki IO, von Er, Lahesmaa RR, Isomaki H, Saario R, Arnold WJ, Toivanen A: *Salmonella* lipopolysaccharide in synovial cells from patients with reactive arthritis. *Lancet* 1990, 335:685-688.
6. Granfors K, Toivanen A: IgA-anti-*Yersinia* antibodies in *Yersinia* triggered reactive arthritis. *Ann Rheum Dis* 1986, 45:561-565.
7. Inman RD, Johnston MEA, Klein MH: Analysis of serum and synovial fluid IgA in Reiter's syndrome and reactive arthritis. *Clin Immunol Immunopathol* 1987, 43:195-203.
8. Wollenhaupt HJ, Drech T, Schneider C, Zeidler H: Specific serum IgA antibodies in *Chlamydia*-induced arthritis. *Z Rheumatol* 1989, 48: 86-88.
9. Lauhio A, Leirisalo-Repo M, Lahdevirta JU, Saikku P, Repo H: Doubleblind, placebo-controlled study of three month treatment with lymecycline in reactive arthritis, with special reference to *Chlamydia* arthritis. *Arthritis Rheum* 1991, 34:6-13.
10. Buxbaum J: Therapy for the seronegative spondyloarthropathies. *Current Opin Rheumatol* 1989, 1:159-164.
11. Hammer RE, Maika SD, Richardson JA, Tang J-P, Taurog JD: Spontaneous inflammatory disease in transgenic rats expressing HLA-B27 and human $\beta 2m$: an animal model of HLA-B27-associated human disorders. *Cell* 1990, 63:1099-1112.
12. Yu DTY, Choo SY, Schaack T: Molecular mimicry in HLA-B27-related arthritis. *Ann Intern Med* 1989, 111:581-591.
13. Schwimmbeck PL, Yu DT, Oldstone MBA: Autoantibodies to HLA-B27 in the sera of HLA-B27 patients with ankylosing spondylitis and Reiter's syndrome. *J Exp Med* 166:173-181, 1987.
14. Stieglitz H, Fosmire S, Lipsky P: Identification of a 2-Md plasmid from *Shigella flexneri* associated with reactive arthritis. *Arthritis Rheum* 32: 937-946, 1989.
15. Bjorkman PJ, Saper MA, Samraoui B, Bennett WS, Strominger JL, Wiley DC: Structure of the human class I histocompatibility antigen, HLA-A2. *Nature* 329:506-512, 1987.
16. Garrett TPJ, Saper MA, Bjorkman FU, Strominger JL, Wiley DC: Specificity pockets for the side chains of peptide antigens in HLA-Aw68. *Nature* 342: 692-696, 1989.
17. Lopez de Castro JA, Bragado R, Lauzurica P, Lopez D, Rajo S: Structure and immune recognition of HLA-B27 antigens: implications for disease association. *Scand J Rheumatol* 1990, Suppl 87:51-69.
18. Hill ASV, Allsopp CEM, Kwiatkowski D, McMichael AJ: HLA Class I typing by PCR: HLA-B27 and an African B27 subtype. *Lancet* 1991, 337:640-642.
19. Inman RD, Chiu B, Johnston MEA, Vas S, Falk J: HLA-class I-related impairment of IL-2 production and lymphocyte response to microbial antigens in reactive arthritis. *J Immunol* 1989, 142:4256-4260.
20. Winchester R: AIDS and the rheumatic diseases. *Bull Rheum Dis* 39:1-10, 1990.

EPIDEMIOLOGY OF ROCKY MOUNTAIN SPOTTED FEVER IN SOUTH CAROLINA, 1985-1990*

BEVERLY R. SMATHERS, D.V.M., M.P.H.

JEFFREY L. JONES, M.D., M.P.H.**

FRANCISCO S. SY, M.D., Dr. P.H.

PAMELA MEYER, M.S.P.H.

South Carolina has ranked second or third in the United States in Rocky Mountain spotted fever (RMSF) incidence for the past 10 years. About two-thirds of the cases in the United States are reported from North and South Carolina.¹ The purpose of this study was to compare data from cases of RMSF reported to the state health department with hospital discharge data, as well as death certificate data in order to obtain a better picture of RMSF morbidity and mortality in South Carolina.

Rocky Mountain spotted fever or American tick typhus is caused by the agent *Rickettsia rickettsii* and is transmitted to man by contact with an infected tick. In South Carolina, the main tick vector is *Dermacentor variabilis*, the American dog tick. Ticks are infected for life and can pass the infection to their offspring by transovarian or transstadial passage. Many small rodents, and other mammals including raccoons, opossums, porcupines, coyotes, foxes, horses, cattle, sheep, hogs, deer and dogs may be part of the life cycle. However, the tick itself is the main reservoir, as most other animals do not remain infected

for very long. Man is an incidental host.²

Rickettsia organisms invade and multiply in the vascular endothelium, inducing a generalized vasculitis that leads to activation of clotting factors, capillary leakage, and microinfarctions in various organs. RMSF is a multi-systemic disease which may present with a myriad of symptoms depending on the stage of infection. The classic presentation has been described as fever, headache, and myalgia, along with a rash on the palms and soles occurring three to 14 days after a tick bite. However, a large enough number of patients present without a classic presentation to make the diagnosis a challenge. Although highly sensitive serologic tests are available for confirmation (indirect fluorescent antibody and indirect hemagglutination, 94 and 97 percent sensitivity respectively), they are not positive early enough for diagnosis.³ Cases treated early with tetracycline or chloramphenicol have excellent recovery, but without proper treatment, RMSF can have a case fatality rate as high as 20 percent.

METHODS

Three different data sources were reviewed, analyzed and compared to gain insight into the epidemiology of RMSF in South Carolina. The first source was hospital discharge data collected by the S.C. Division of Research and Statistical Services (DRSS) which contains information on every non-military hospital patient in the state, including admission date, discharge date, age, race, sex, county of residence, primary and secondary diagnoses (four secondary diagnoses listed),

*From the Department of Epidemiology and Biostatistics, School of Public Health, University of South Carolina, Columbia (Drs. Smathers and Sy); and the Division of Disease Surveillance and Investigations, South Carolina Department of Health and Environmental Control (Dr. Jones and Ms. Meyer). Dr. Smathers is now with the Armed Forces Medical Intelligence Center, Ft. Detrick, Maryland.

**Address correspondence to Dr. Jones at the South Carolina Department of Health and Environmental Control, Disease Control and Epidemiology, Robert Mills Complex, Suite 310, Box 101106, Columbia, SC 29211.

primary and secondary procedures (four secondary procedures listed), total charge, intensive care unit charge, payor, length of stay and discharge status (including death). The hospital discharge data were derived from hospital inpatient billing data (UB82) for the years 1986-1990.

Since the UB82 was implemented in 1986, an alternative data source, the hospital discharge data system (HDDS) was used for 1985. A computer search identified cases from all inpatient discharges listing RMSF as a diagnosis (ICD-9-CM code 082.0). The hospital discharge data (UB82 and HDDS) will be referred to as the UB82.

The second data source was the information compiled by the S.C. Department of Health and Environmental Control (DHEC) surveillance system, whereby physicians report any suspected cases of RMSF along with information about the patient's age, sex, race, county of residence, date of report, date of symptom onset, and laboratory confirmation. This surveillance data will be referred to as DHEC data. The DHEC data were reviewed for the years 1986-1990 since they were available in a computerized format only for those years.

The third data source reviewed was the death certificates obtained from DHEC vital records. A computer search identified all death certificates which listed RMSF (ICD-9-CM code 082.0) as the immediate or underlying cause of death for the years 1985-1989. 1989 was the most recent year death certificate data were available at the time of this study.

A comparative analysis was made between the UB82 data and the DHEC data on the following statistics: total cases, total South Carolina incidence rates, and incidence rates by age group, race/sex group, and county. To calculate incidence rates, projected South Carolina population figures for each year were obtained from DRSS. The UB82 data were compared with the death certificate data on case fatalities, and fatality rate by age group, race/sex group, and county.

RESULTS

Between 1986-1990, 204 cases of RMSF were reported to DHEC. Between 1985-1990, 615 hospital patients had RMSF diagnostic codes listed on the UB82. The mean length of stay for patients listed on the UB82 was five days.

Table 1 presents a comparison of the average annual incidence rates for RMSF in South Carolina between the UB82 data and the DHEC data. Using the UB82 data, the average annual incidence of RMSF in South Carolina for the period 1985-1990 was 2.9/100,000. The DHEC data revealed an average annual incidence rate of 1.2/100,000 for 1986-1990. The national average annual incidence rate for 1985-1990 as reported by the Centers for Disease Control (CDC) was 0.3/100,000.^{1,4-8}

The UB82 incidence rates are higher in all age groups than the incidence rates derived from DHEC data, but the pattern seen in the two data sources is similar, showing the highest incidence in the 5-9 and 10-14 year age groups. The highest percentage of cases occurred in the 40-59 year age category, as shown in Figure 1, which again shows a consistent pattern between the UB82 and DHEC data. Ages for hospitalized patients (UB82) with the RMSF diagnostic code range from 0-83, with a mean age of 30.5, while ages for the reported cases (DHEC data) ranged from 0-77, with a mean age of 34.5.

The average incidence rate by race/sex group also showed higher rates for the UB82 data than the DHEC data but a similar pattern is seen in the two data sources with the highest incidence occurring in white males (Table 1). The highest percentage of cases also occurs in white males in both data sets as seen in Figure 2.

Incidence was also analyzed using the UB82 data for the patient's county of residence and is presented in Figure 3 as the total cases per county and in Figure 4 as the incidence rate per county. Counties in the northwest corner of the state showed the highest case burden and highest incidence rates. The

TABLE 1.
AVERAGE ANNUAL INCIDENCE RATES OF
ROCKY MOUNTAIN SPOTTED FEVER IN SOUTH CAROLINA

	DATA SOURCE		DHEC CASES (1986-1990)	
	UB82 (1985-1990)			
	TOTAL CASES	RATE 100,000	TOTAL CASES	RATE 100,000
Age Group				
0-4	44	2.7	21	1.5
5-9	79	5.1	25	1.9
10-14	59	3.9	21	1.7
15-19	48	2.9	11	0.8
20-29	101	2.7	27	0.9
30-39	97	2.8	24	0.8
40-59	114	2.7	40	1.1
≥ 69	72	2.3	21	0.8
No age reported in 14 cases				
Race/Sex				
White M	341	4.8	77	1.3
White F	196	2.7	56	0.9
Nonwhite M	49	1.6	20	0.8
Nonwhite F	29	0.8	9	0.3
No race/sex reported in 42 cases				
Total	615	2.9	204	1.2

incidence by county using the DHEC data showed very similar results with six of the ten highest incidence counties being the same in both data sets, but with the overall incidence rate being lower for the DHEC data.

Figure 5 shows the total number of cases by month of hospitalization as taken from the UB82 data. The summer months of June and July had the highest number of cases, with few to no cases during the coldest winter months of January, February, and December.

The UB82 identified 10 deaths in hospitalized patients diagnosed with RMSF for the six year period 1985-1990, while the death certificates for the five year period 1985-1989 listed RMSF as the probable cause for only five deaths. Using the total number of cases for the appropriate number of years from the hospitalization data (UB82) as the denominator, case fatality rates were calculated for both the UB82 and the death certificate data. A comparison of case fatality rates between the UB82 data and the death certificate data is

presented in Table 2. The case fatality rate for the UB82 data was 1.6 percent and for the death certificate data was 0.9 percent. The national case fatality rate as reported by the CDC for 1985-1990 was 3.4 percent.^{1,4-8} However, the CDC rate is based on reported cases. If we use reported cases as our denominator, we have a case fatality rate of 4.9 percent for the UB82 and 2.5 percent for the death certificate data. Both UB82 and DHEC data show an increase in fatality rate with age, with the highest rates in the over 60 age group.

The UB82 data show a higher case fatality rate for white females than white males (Table 2), but this difference was not statistically significant (Fisher exact test, 2-tailed, $p=0.6$). The death certificate data show the case fatality rate to be greater for nonwhite females than nonwhite males (Table 2), but this also proves to be not significant (Fisher exact test, 2-tailed, $p=0.3$)

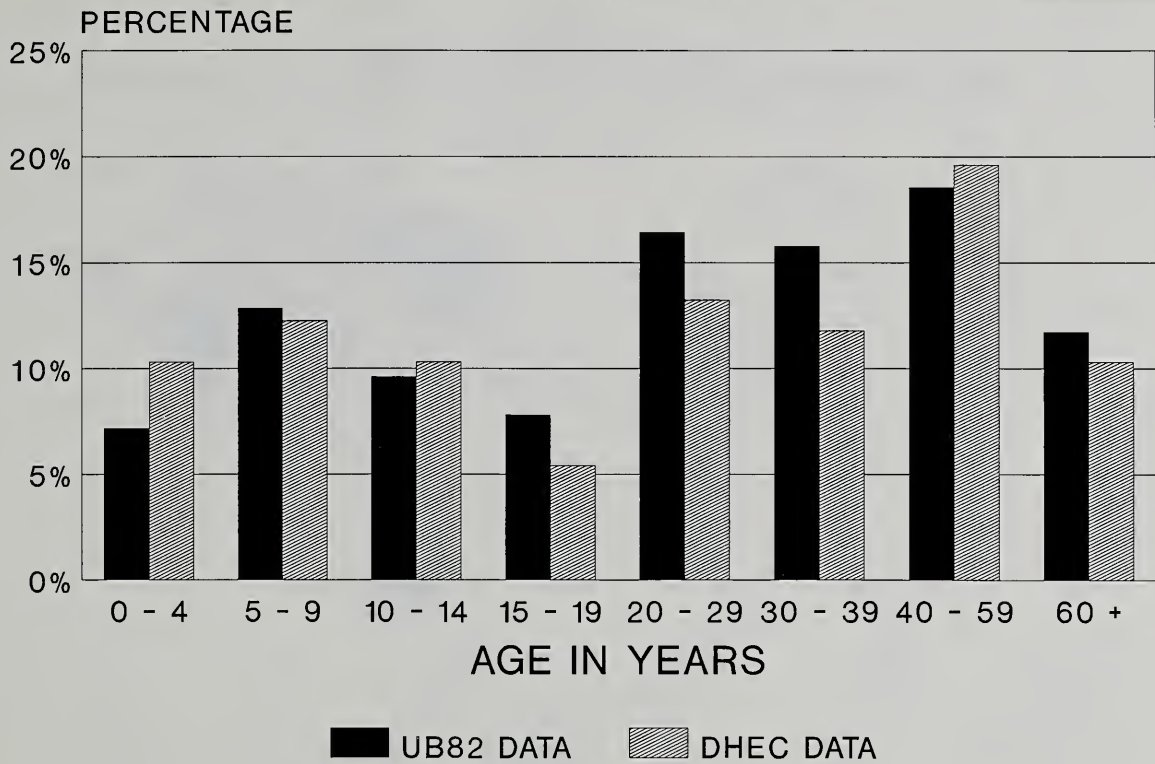


Figure 1. Percentage of Cases of RMSF in South Carolina by Age Group

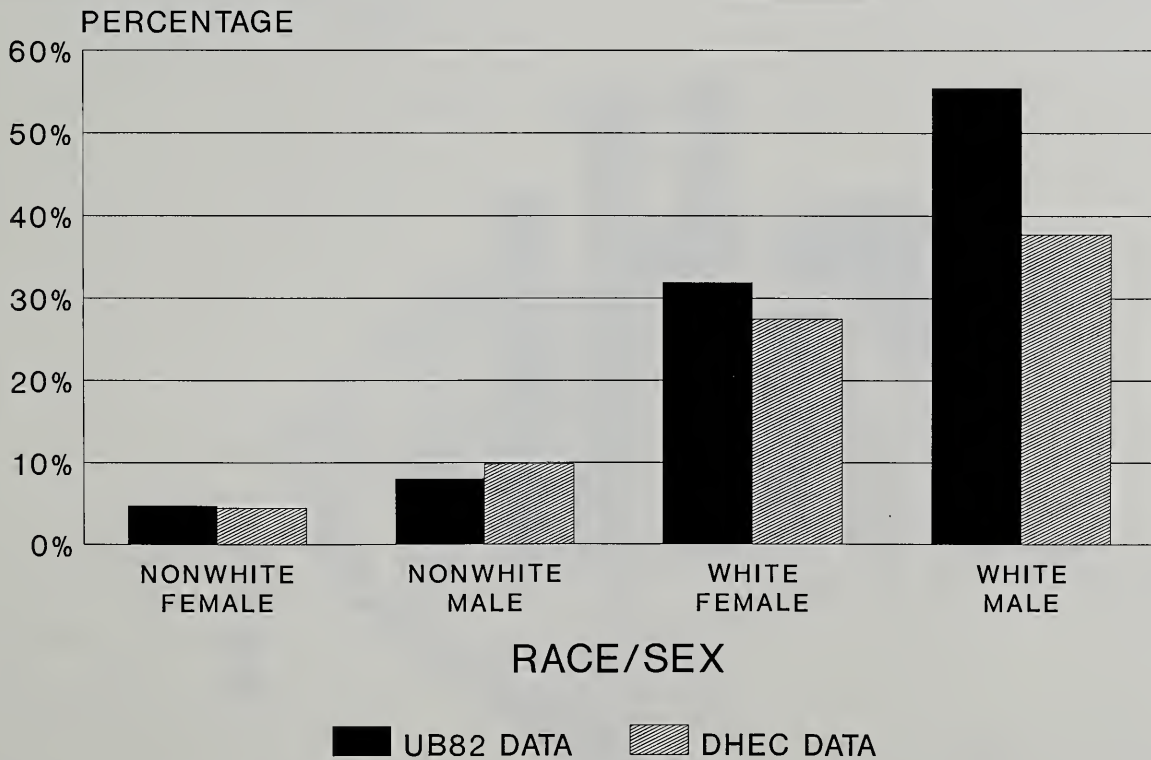


Figure 2. Percentage of Cases of RMSF in South Carolina by Race and Sex

TABLE 2.
CASE FATALITY RATES OF
ROCKY MOUNTAIN SPOTTED FEVER IN SOUTH CAROLINA

	DATA SOURCE			DEATH CERTIFICATES		
	UB82 (1985-1990)			(1985-1989)		
	DEATHS	CASES*	RATE %	DEATHS	CASES*	RATE %
Age Group						
0-4	0	44	0	0	39	0
5-9	0	79	0	0	73	0
10-14	0	59	0	0	50	0
15-19	0	48	0	0	46	0
20-29	2	101	2.0	0	93	0
30-39	1	97	1.0	1	83	1.2
40-59	2	114	1.8	2	95	2.1
≥ 60	5	72	6.9	2	62	3.2
Race/Sex						
White M	5	341	1.5	2	297	0.7
White F	5	196	2.5	2	177	1.1
Nonwhite M	0	49	0	0	45	0
Nonwhite F	0	29	0	1	23	4.4
Total	10	615	1.6	5	541	0.9

*UB82

Figure 3. Rocky Mountain Spotted Fever Total Cases By County in South Carolina, 1985 - 1990.

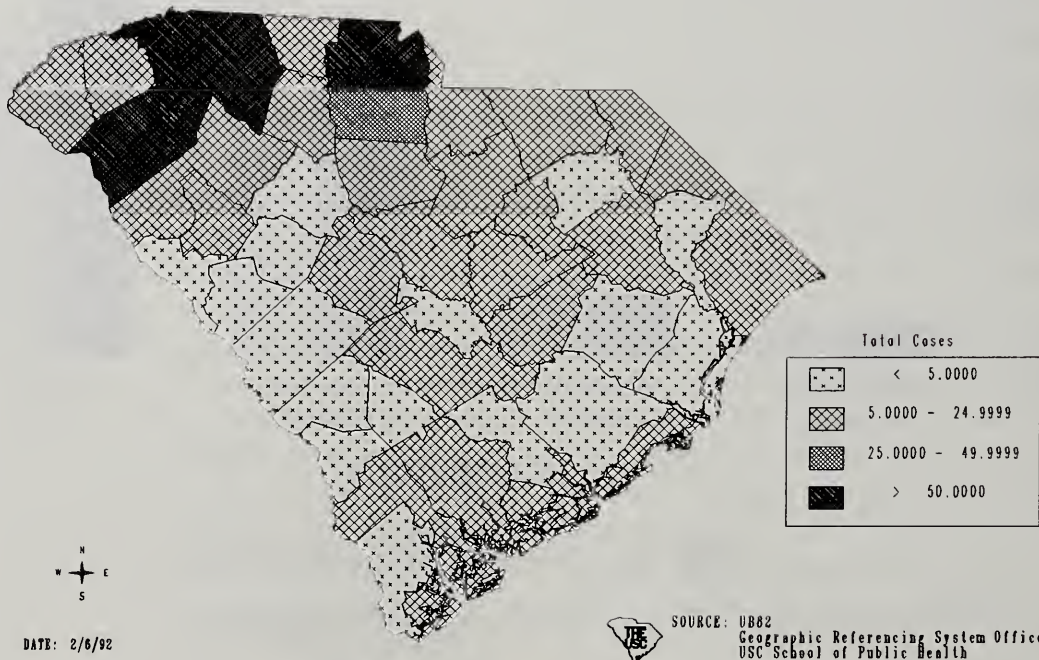


Figure 4. Rocky Mountain Spotted Fever Average Annual Incidence by County in South Carolina, 1985 - 1990.

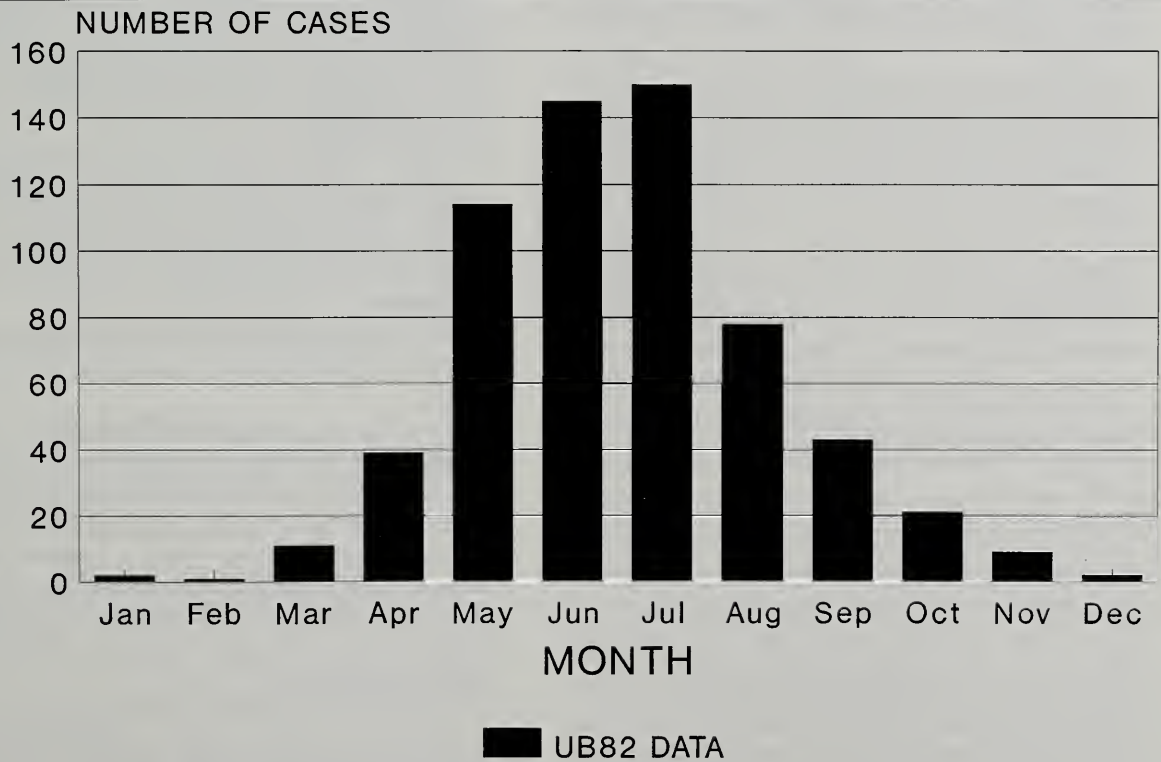
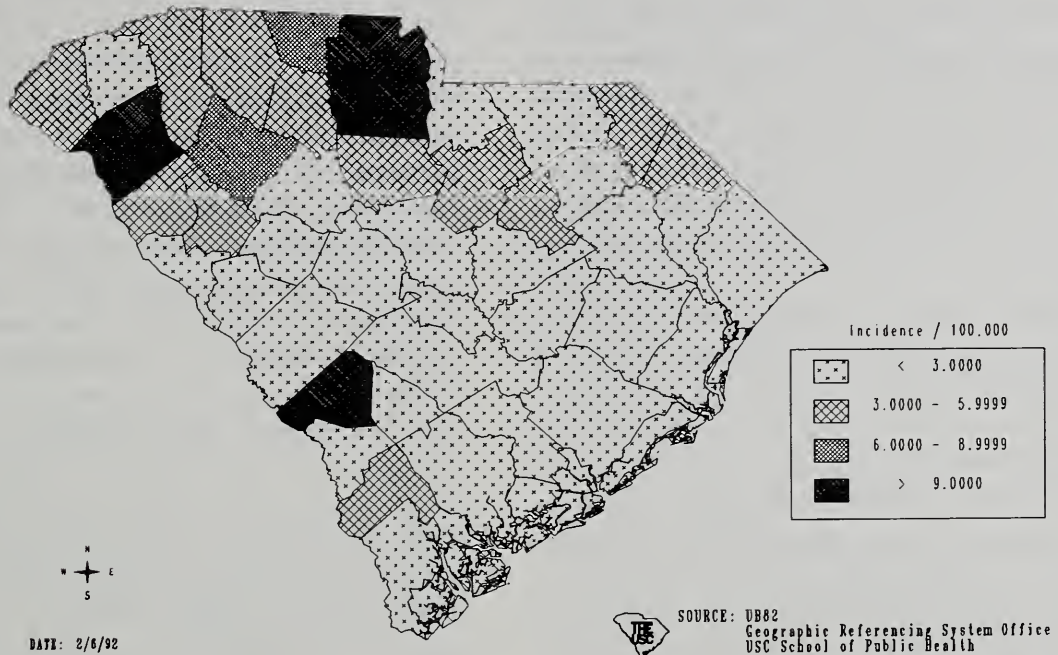


Figure 5. Monthly Incidence of RMSF in South Carolina, 1985 - 1990

DISCUSSION

When conclusions are drawn from analysis of any data source the limitations of the data must be considered. The limitations of the UB82 data are: 1) it includes only those patients ill enough to be hospitalized, 2) it is not known whether or not the diagnosis was laboratory confirmed, and 3) the diagnosis could have been miscoded. Other studies have reported that anywhere from 30 to 87 percent of RMSF cases require hospitalization.^{9,10} If we postulate that hospitalized patients included only the more serious cases of RMSF, these data would greatly underestimate the total incidence. The limitations of the DHEC reported case data include: 1) reported cases may not be laboratory confirmed, 2) the final status of each case is not known, and 3) RMSF reporting is a passive surveillance system and probably underestimates the actual number of cases. The limitations of the death certificate data are: 1) the diagnosis of RMSF is not necessarily laboratory confirmed, and 2) some deaths due to RMSF may have been miscoded on the death certificate.

Keeping the limitations of these various data sources in mind, we see that although incidence rates are higher in all age, race and sex groups for the UB82 data than for the DHEC data, the pattern in the two data sources is similar, which tends to validate those patterns. Higher incidence rates in the younger age groups is consistent with previous studies reported in the literature.⁹⁻¹⁴ This has been attributed to parents checking their children for ticks more regularly than themselves and being more likely to take children for prompt medical attention.¹⁰ However, children may also be more likely to be exposed to tick habitats than adults. The higher rates in white males are also consistent with previous studies and with national CDC data.^{4,8,12,13} The counties with the highest case burden and the highest incidence rates are, with few exceptions, located in the northwest corner, or Piedmont region of the state. This finding is consistent with a study by Loving et al. which

was conducted in South Carolina in 1974.¹⁵ Loving et al. attributed the higher incidence in the Piedmont to the suburbanization and land development in that area along with a greater abundance of *Dermacentor variabilis* than other parts of the state. Another study conducted in South Carolina in 1973 and 1974 requesting people to submit ticks for analysis found that about five percent of the *Dermacentor* ticks were positive for spotted fever-group rickettsiae, and about 22 percent of the people bitten by infected ticks showed some clinical symptoms.¹⁶ The months of occurrence of clinical cases correspond to the fact that *D. variabilis* is a summer tick.

The case fatality figures indicate that there may be underreporting of RMSF as a probable cause of death on death certificates, since there were nearly twice as many deaths of hospitalized patients (UB82) listing RMSF for a six-year period (1985-1990), than by death certificates listing RMSF for a five year period (1985-1989). The increase in fatality rate with age is consistent with previous studies and national CDC data.^{13,4,5,6,7,17} After analysis, this study found no significant differences in fatality rates for the different race and sex groups.

There is no vaccine currently available against RMSF. Patients should be advised of the best means of prevention which are:

1. Avoid heavily wooded areas with dense vegetation;
2. Wear long-sleeved shirts and long pants, with socks pulled over pant legs and closed shoes;
3. Use tick repellents or acaricides. Permethrin (an acaricide) applied to clothing provides 100 percent protection against all stages of the tick, while DEET provides about 92 percent protection (Permethrin is manufactured by Fairfield American in Newark, NJ and distributed by Coulston International, Easton, PA; but is not readily available in South Carolina);¹⁸⁻²⁰
4. When in a tick infested area, check often for ticks and remove any attached ticks carefully by applying steady traction with forceps, tweezers, or fingers covered with tissue placed as close to attachment as possible. Hands should be washed with soap after

removal. Ticks must be attached for at least five hours to transmit infection, so early removal is important.²¹

5. Pets should also be inspected for ticks. While they are not reservoirs for the disease, they can transport ticks into the home environment.

Physicians should include RMSF in their differential diagnosis of any case where there is fever of unknown origin, especially during the spring and summer seasons, regardless of the history of a tick bite, because small larval and nymph stages can feed transiently and go undetected.²¹ Since case fatality increases with each day that treatment with tetracycline or chloramphenicol is not initiated, physicians should consider early treatment, while waiting for serologic confirmation.¹⁷

SUMMARY

By analyzing three different sources of data including DHEC reported cases, hospital discharge data, and death certificates, our study reveals that RMSF is endemic in South Carolina particularly in the Piedmont area and that underreporting of RMSF in South Carolina is likely. The incidence and case fatality rates of RMSF derived from hospital discharge data are higher than these rates derived from cases reported to DHEC. Physicians should be aware of the endemicity of RMSF in South Carolina and should include it in the differential diagnosis of any case of fever of unknown origin especially during the spring and summer seasons regardless of the history of a tick bite. □

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REFERENCES

- Centers for Disease Control, Rocky Mountain spotted fever United States, 1990. MMWR 40: 451-459, 1991.
- McDade JE, Newhouse VF: Natural history of *Rickettsia rickettsii*. Ann Review Microbiol 40: 286-309, 1986.
- Fisher JJ. Rocky Mountain spotted fever: when and why to consider the diagnosis. Postgrad Med 87: 109-118, 1990.
- Centers for Disease Control, Rocky Mountain spotted fever United States, 1985. MMWR 35: 247-249, 1986.
- Centers for Disease Control, Rocky Mountain spotted fever United States, 1986. MMWR 36: 314-315, 1987.
- Centers for Disease Control, Rocky Mountain spotted fever United States, 1987. MMWR 37: 388-389, 1988.
- Centers for Disease Control, Rocky Mountain spotted fever United States, 1988. MMWR 38: 513-514, 1989.
- Centers for Disease Control, Rocky Mountain spotted fever and human ehrlichiosis - United States, 1989. MMWR 39: 281-284, 1990.
- Strickland AL, Darby CP, Corbett B: Rocky Mountain spotted fever. J S C Med Assoc 79:431-434, 1983.
- Wilfert CM, MacCormack N, Kleeman K, Philip RN, Austin E, Dickinson V, Turner L: Epidemiology of Rocky Mountain spotted fever as determined by active surveillance. J Infect Dis 150:469-479, 1984.
- White DJ, Flynn MK: Rocky Mountain spotted fever in New York State. Ann N Y Acad Sci 590:248-255, 1990.
- Brooks TJ: Rocky Mountain spotted fever. Mississippi Morbidity Report 6:1-2, 1988.
- Taylor JP, Istre GR, McChesney TC: The Epidemiology of Rocky Mountain spotted fever in Arkansas, Oklahoma, and Texas, 1981 through 1985. Am J Epidemiol 127:1295-1301, 1988.
- Taylor JP, Betz TG: Rocky Mountain spotted fever in Texas 1978 through 1987. Texas Medicine 85:38-40, 1989.
- Loving SM, Smith AB, DiSalvo AF, Burgdorfer W: Distribution and prevalence of spotted fever group rickettsiae in ticks from South Carolina with an epidemiological survey of persons bitten by infected ticks. Am J Trop Med Hyg 27:1255-1260, 1978.
- Burgdorfer W, Adkins TR, Priester LE: Rocky Mountain spotted fever (tick-borne typhus) in South Carolina: an educational program and tick/rickettsial survey in 1973 and 1974. Amer J Trop Med and Hyg 24:866-872, 1975.
- Fishbein DB, Frontini MG, Giles R, Vernon LL: Fatal cases of Rocky Mountain spotted fever in the United States, 1981-1988. Ann N Y Acad Sci 590:246-247, 1990.
- Schreck CE, Snoddy EL, Spielman A: Pressurized sprays of permethrin or DEET on military clothing for personal protection against *Ixodes dammini* (Acari: Ixodidae). J Med Entomol 23:396-399, 1986.
- Insect repellents. The Medical Letter on Drugs and Therapeutics 31:45-47, 1989.
- Zaki MH: Selected tickborne infections; a review of Lyme disease, Rocky Mountain spotted fever, and babesiosis. N Y J Med 89:320-335, 1989.
- Greene CE: Rocky Mountain spotted fever. J AmVet Med Assoc 191:666-671, 1987.

MANAGING AGITATION IN THE CRITICAL CARE SETTING*

ALBERTO B. SANTOS, M. D.**

MADELAINE M. WOHLREICH, M. D.

SAMUEL T. PINOSKY, M. D.

Agitation in critical care settings can be defined as an excess of motor activity which is non-purposeful and potentially dangerous. Agitation often signals an underlying pathophysiological processes and must be managed with urgency. Untreated agitation can jeopardize a patient's medical care through interference with life support systems, can tax staff, and frighten the family whose support is important to the patient's well being.

The intensive care setting (ICU) can be an extraordinarily stressful place for the critically ill patient, who is often immobilized by his illness and by monitoring and life support equipment. The patient is asked to remain under control, emotionally restrained, and cooperative with medical orders. Conscious patients who are unable to communicate pain will likely become agitated. Patients on respiratory support often experience intense anxiety from being paralyzed, from forced mandatory ventilation, or while being weaned from respirators. This anxiety can lead to agitation and changes in physiologic parameters that can effect ventilatory processes. However, neither pain nor anxiety is likely to lead to delirium, an acute organic mental syndrome, and the most common cause of agitation in the critical care setting.

Delirium is a manifestation of acute organic brain dysfunction. It is caused by aberrations in cerebral physiology in non-psychiatric

medical conditions. The essential features of delirium are:

- impairment of consciousness (i.e., reduced clarity of awareness of the environment) with reduced ability to focus, sustain, or shift attention;
- changes in cognition (i.e., memory deficit, disorientation, language disturbance, perceptual disturbance);
- these features develop over a short period of time (usually hours to days) and tend to fluctuate over the course of the day.¹

Unfortunately, the term "ICU psychosis" has contributed to the under-diagnosis of delirium by implying a causal relationship between a stressful ICU environment and impaired mental functioning. Other reasons for the under-diagnosis of delirium include a waxing and waning course, its occurrence in quiet and non-agitated patients, and the fact that agitated patients are often unable to cooperate with mental status testing.

The prevalence of delirium has been reported in two to 12 percent of patients in coronary care units and in 11 to 28 percent of patients in surgical intensive care units.² In one study the rate of diagnosis of delirium rose from 38 to 70 percent when more specific methods for identification were used.³ It is therefore essential that nursing staff who have the greatest amount of patient contact be trained in the identification, differential work-up, and management of delirium.

MANAGEMENT OF DELIRIOUS AGITATION

The management of the delirious patient must target the medical condition which is respon-

*From the Department of Psychiatry and Behavioral Sciences, Medical University of South Carolina, Charleston.

**Address correspondence to Dr. Santos at the Department of Psychiatry, Medical University of South Carolina, 171 Ashley Avenue, Charleston, SC 29425.

sible for the brain function alteration. Therefore metabolic derangements and drug effects (or withdrawal) should be quickly investigated and corrected. Since ICU patients often have impairments of several organ systems, delirium in these patients can be multifactorial.

Sedation is often indicated to provide comfort and safety, to control behavior adequately, and to allow for evaluation. Although orally administered medications are useful for patients with mild agitation and restlessness, parenteral medication is often necessary in the ICU setting for more rapid control of symptoms. The intravenous route is preferred when continued sedation is indicated. A variety of pharmacologic agents have been used for this purpose, including barbiturates, opiates, antipsychotics, benzodiazepines, and paralytics. National practice patterns suggest a preference for the use of the benzodiazepines (lorazepam, diazepam and midazolam) and the antipsychotic haloperidol.⁴ Comparative research on the use of these drugs in this population is insufficient, therefore there is no expert consensus on their routine clinical use.

We will review the effectiveness and limitations of these agents and present clinical guidelines for routine administration. As a standard for comparison consider that the

ideal sedative drug for ICU use should provide (a) rapid onset of action, (b) predictable duration of sedation, (c) no cumulative effects, (d) wide therapeutic index (LD50/ED50), (e) low incidence of adverse cardiovascular and respiratory effects, and (f) allow the patient to remain arousable enough to assess (see Table 1).

BENZODIAZEPINES

Benzodiazepines have anxiolytic, sedative, anticonvulsant, muscle relaxant, and amnesic properties, all of which are useful in clinical practice. Like the older sedative-hypnotics, they are central nervous system depressants, having anxiolytic properties at relatively low doses, and sedative properties at higher doses. Compared to barbiturates and similarly acting drugs, benzodiazepines have a higher therapeutic index (LD50/ED50). Benzodiazepines are commonly administered IV for preoperative sedation, in treating seizures, and for agitated critical care patients.

Benzodiazepines vary markedly in their half-lives of distribution and elimination. Because drug loss by redistribution into the tissues is more rapid than drug elimination, with single dose administration, plasma levels are determined by the rate of absorption and distribution. With repeated dosing, on the

TABLE 1

ADVANTAGES AND LIMITATION OF COMMONLY USED INTRAVENOUS SEDATIVES IN THE CRITICAL CARE SETTING

Medication	Onset	Metabolites	Duration of Sedation	Adverse Effects	Tolerance	Responsivity
Diazepam	2-5 Min	Active	Single dose-shorter than lorazepam; Accumulates with repeated dosing. Elim T _{1/2} =60-100h	↓ Respiration (apnea poss); ↓ systolic BP Likely to accumulate with hepatic impairment and in elderly (metabolism requires oxidation)	Yes	Variable Responsivity
Lorazepam	2-20 Min	None Active	Little Accumulation T _{1/2} =15	Little effect on respiratory and hemodynamic functions; Safer with elderly and liver disease; Excess sedation possible.	Yes	Variable Responsivity
Midazolam	2-5 Min	Active	Very Short Duration T _{1/2} =1½-2h	Rebound poss between doses; Variable effects on BP, HR, and respiration (↓ tidal volume); ↑ Confusion poss.	Yes (Early)	Variable Responsivity
Haloperidol Lactate	10-30 Min	None Active	Variable Sedation T _{1/2} =10-20h	Minimal effects of hemodynamic and respiratory functions; EPS rare with IV use.	NO	Arousable for Assessment

other hand, distribution to all body compartments is complete and it is the elimination half-life which determines the steady-state level of the drug. Diazepam, lorazepam, and midazolam are the most commonly used benzodiazepines for sedating agitated, delirious patients.

Diazepam: The active metabolite of diazepam (desmethyldiazepam) has an extremely long half-life, and with repeat dosing may represent most of the pharmacologically active compound in serum. Desmethyldiazepam is widely distributed to peripheral adipose tissue, can accumulate and can cause prolonged sedation and obtundation with repeated dosing. IV diazepam has an almost immediate onset and is frequently associated with a mild decrease in systolic pressure. However, the principle adverse effect of diazepam is respiratory depression, particularly when pulmonary function is compromised.⁵ Because this respiratory effect immediately follows IV infusion and can produce apnea, slow infusion (over 30 to 90 seconds) of diazepam is important.

Lorazepam: Lorazepam is most commonly recommended in the recent literature for use in critical care settings. Lorazepam is conjugated with glucuronic acid and has no active metabolites. Unlike the pathways involved in the initial metabolism of other benzodiazepines, glucuronidation is less affected by aging and liver disease. In cirrhosis, the elimination of benzodiazepines which are metabolized by oxidation and demethylation may be reduced by as much as five-fold, thus, routine doses could lead to serious toxicity. Thus, if IV benzodiazepines are to be used in elderly patients or those with cirrhosis, lorazepam is the drug of choice. Lorazepam has relatively little effect on cardiopulmonary functions.⁶ It has a relatively brief elimination half-life ($T_{1/2}$ =15 hours) compared to diazepam ($T_{1/2}$ =60-100 hours). It is much less extensively distributed to peripheral adipose tissue than diazepam. Lorazepam has a longer-lasting effect after a single IV dose than diazepam and midazolam because it has the longest

half-life of distribution.

Midazolam: Midazolam is approved by the FDA for preoperative sedation, sedation prior to induction of general anesthesia, and sedation prior to short diagnostic or endoscopic procedures. Midazolam has been used experimentally for agitation control due to its predictable onset (approximately 15 minutes) and short duration of action.⁷ (Its half-life is $T_{1/2}$ =1.5-2 hours.) It is widely distributed to peripheral adipose tissue. The use of this high potency, short-acting benzodiazepine, poses a unique clinical problem because its potency makes it more likely to cause tolerance which is readily unmasked by its rapid termination. Patients may therefore experience rebound symptoms between scheduled doses. Such problems can be dealt with by switching to longer-acting drugs when repeated dosing are indicated. Because of reports of rebound effects, paradoxical reactions, and withdrawal Midazolam is less desirable for ICU use.⁸ Midazolam can also cause decreased tidal volume, and changes in blood pressure, heart rate, and respiration.⁶

HALOPERIDOL AND OTHER NEUROLEPTICS

The intravenous use of haloperidol in critical care settings is becoming increasingly common.⁹⁻¹⁴ The administration of IV haloperidol to acutely agitated medical and surgical patients has proven to be safe and effective and has become routine in clinical situations such as the management of post-cardiotomy delirium where hallucinosis is common. The IV route of administration bypasses first-pass liver effects and is quick, reliable, and convenient in the ICU where patients have a venous access and an abundance of monitoring equipment is available. In addition, dystonia and neuroleptic malignant syndrome (fever, autonomic instability, muscular rigidity, altered consciousness, and other extrapyramidal symptoms) are rare with intravenous haloperidol compared to oral and intramuscular administration.¹⁵

Unlike diazepam, morphine sulfate, low

potency neuroleptics or barbiturates, haloperidol has minimal effects on hemodynamic and respiratory function and is unlikely to cause or aggravate delirium. Haloperidol is without active metabolites. Sedative effects after IV Haldol are variable. In some confused and agitated patients low doses produce light sleep with easy arousal for physical exam; in other patients achieving sedation requires serum levels in excess of those needed to block dopamine receptors, suggesting that factors other than dopamine receptor physiology may be involved.⁶ The onset of action of IV haloperidol is 10 to 30 minutes¹³ compared to near-immediate for IV benzodiazepines.

Another neuroleptic in current popular use is droperidol which allows more rapid control than haloperidol but causes much more associated sedation and hypotension² and is therefore a less desirable choice. Other neuroleptics available in intravenous form may lower the seizure threshold and increase the risk of hypotension and should thus be avoided.

CLINICAL GUIDELINES

The most important aspect of the treatment of delirious agitation is the rapid assessment and correction of the underlying disturbance resulting in the change in mental status. Arterial blood gases should always be checked when treating critically ill patients who become agitated.

Drug reactions must be ruled out. If anticholinergic delirium is suspected, physostigmine 1-2 mg should be administered by slow IV while monitoring for cholinergic effects (antipsychotic agents risk increasing anticholinergic toxicity). If a narcotic overdose is suspected, administer Naloxone 4 mg sq slow IV. If ethanol withdrawal is suspected, treat with a cross-reactive agent, (i.e. a benzodiazepine).

For all other causes of delirium, haloperidol is the treatment of choice because of its low incidence of cardiovascular and anticholinergic effects. In closed head injury haloperidol is an especially good choice in the first 72

hours because it appears to reduce intracranial pressure.¹⁶

An acceptable initial dose of haloperidol is 5 mg IV (lines should be flushed with each dose since the drug can precipitate compounds such as heparin and Dilantin). The onset of action is 10 to 30 minutes. If the patient remains agitated, simply repeating the same dose does not appear to result in a cumulative tranquilizing effect. The previous dose should be therefore doubled every 20 to 30 minutes and can be increased up to doses of 75 mg per hour if necessary until agitation is resolved.^{13,14,17} When a favorable response is noted, the previous dose should be repeated at the next interval. Although daily doses over 400 mg have been used, and a single bolus of up to 150 mg has been reported, greater than 40 mg is rarely needed. In older patients, doses of haloperidol as low as 0.5 mg. bid may be effective. In younger patients, much higher doses may be required, at least initially. Haloperidol can also be safely administered by IV "drip" infusion at 10-12 mg/hr.¹⁸ This mode of administration is becoming more prevalent because of convenience and safety.

If the patient remains agitated after 20-40 mg of haloperidol, we suggest a benzodiazepine be added.¹⁷ The combined use of benzodiazepines and neuroleptics to sedate agitated patients is also indicated when rapid onset of action is desired.¹⁹⁻²¹ A recent study compared the effects on agitated patients of IM (1) lorazepam 4 mg, (2) haloperidol 5 mg, and (3) the combination of lorazepam 4 mg and haloperidol 5 mg.²² Combined use of haloperidol and lorazepam was more effective for quieting patients than either medication alone, particularly within the first 30 to 60 minutes of treatment. Side effects were minimal for all medication groups. Other investigators have shown similar response to the combination of IV haloperidol and lorazepam in medically ill patients.^{10,23} In a report on control of agitated behavior in patients with delirium and concurrent cancer, 24 of 25 patients with agitated delirium

became calm in less than 1 1/2 hours using a titrated combination of haloperidol and lorazepam. Doses from 36-480 mg of lorazepam and 100-480 mg of haloperidol were used without medical complications. In patients with already compromised cardiorespiratory status, the use of the medication combination had no additive negative effects on respiratory functions.² The high doses of haloperidol and lorazepam necessary in patients with organic-delirium secondary to cancer are rarely needed to adequately treat patients with psychotic agitation without concomitant physical disease. Haloperidol and lorazepam remain stable in a mixture for approximately four to six hours and can be mixed in the same syringe.² Once agitation is controlled, dose and interval should be adjusted according to the patient's course. PRN dosing is not advisable in treating agitated ICU patients. Clinicians should use these medications only in settings where the patient can be supervised continuously and where there are resources for emergency resuscitation.

SUMMARY

Pharmacologic control of the agitated ICU patient requires preliminary assessment of the underlying causes of agitation. Reversal of correctable abnormalities, consideration of drug reaction, withdrawal and pain management should be addressed first. Delirium is the most common cause of agitation in the ICU and often has multiple causes. Pharmacologic management of agitation can be safely accomplished by intravenous haloperidol with or without lorazepam, as outlined above.



REFERENCES

1. SM-IV Options Book: Work in Progress, 9/1/91, Task force on DSM-IV American Psychiatric Association, Washington, DC, 1991
2. Cassem NH, Hackett TP: The setting of intensive care. In MGH Handbook of General Hospital Psychiatry Ned H. Cassem ed. Mosby Year Book, Inc. St. Louis, MO, 1991.
3. Kornfeld DS et al: Psychiatric complications of open heart surgery. *N Eng J Med* 273:287-292, 1965.
4. Hansen-Flaschen JH, Brazinsky S, Basile C, Lanken PN: Use of sedating drugs and neuromuscular blocking agents in patients requiring mechanical ventilation for respiratory failure. *JAMA* 226:2870-2875, 1991.
5. Del Vecchio PJ: Apnea after intravenous diazepam administration *JAMA* 7:238-239, 1978.
6. Reves JG, Flezzani P, Kissin I: Pharmacology of intravenous anesthetic induction drugs. *CardiaAnesthesia* Grune & Stratton, Inc. 1987.
7. Wyant M, Diamond BI, O'Neal EO, Sloan A, Bunson RL: The use of midazolam in acutely agitated psychiatric patients. *Psychopharmacology Bulletin* 26:126-129, 1990.
8. Mets B, Horsell A, Linton DM: Midazolam-induced benzodiazepine withdrawal syndrome. *Anaesthesia* 46:28-29, 1991.
9. Adams F: Emergency intravenous sedation of the delirious, medically ill patient. *J Clin Psychiatry* 49:1 2(Suppl)22-26, 1988.
10. Adams, F, Fernandez, F, and Anderson, BS: Emergency pharmacotherapy of delirium in the critically ill cancer patient. *Psychosom* 27 (Jan supplement): 33-37, 1986.
11. Moulart P: Treatment of acute nonspecific delirium with IV haloperidol in intensive care patients. *Acta Anesthesiologica Belgica* 40:183-186, 1989.
12. Tesar GE, Murray GB, Cassem NH: Use of high-dose intravenous haloperidol in the treatment of agitated cardiac patients. *J Clin Psychopharmacol* 5:344-347, 1985.
13. Sos J, Cassem NH: Managing post operative agitation. *Drug Therapy* 10:103-106, 1980.
14. Cassem NH. Critical care psychiatry. In: Shoemaker WC, Thompson WL, Holbrook PR, eds. *Textbook of Critical Care*. Philadelphia: WB Saunders, (1984); 981-9.
15. Menza MA, Murray GB, Holmes VF, Rafuls WA: Decreased extrapyramidal symptoms with intravenous haloperidol. *J Clin Psychiatry* 48:278-280,

- 1987.
16. Peterson LG: Rapid tranquilization of the agitated intensive care unit patient: The continuing challenge. *Journal of Intensive Care Medicine* 3:191-192. 1988.
17. Tesar GE, Stern TA: Rapid tranquilization of the agitated intensive care unit patient. *Journal of Intensive Care Medicine* 3:195-201. 1988.
18. Fernandez F, Holmes VF, Adams F, Kavanaugh JJ: Treatment of severe refractory agitation with a haloperidol drip. *J Clin Psychiatry* 49:239-241. 1988.
19. Arana GW, Hyman S: *Handbook of Psychiatric Drug Therapy*. Little, Brown, and Co., Boston, MA. Second edition. 1991.
20. Santos AB, Morton WA: Use of benzodiazepines to improve management of manic agitation. *Hospital and Community Psychiatry* 40:1069-1071. 1989.
21. Arana GW, Ornstein M, Kanter F, Friedman H, Greenblatt DJ: The use of benzodiazepines for psychotic disorders: A literature review and preliminary clinical findings. *Psychopharmacology Bulletin* 22:77-87. 1986.
22. Garza-Trevino, ES, Hollister, LE, Overall, JE, et al. Efficacy of combinations in intramuscular antipsychotics and sedative-hypnotics for control of psychotic agitation. *American Journal of Psychiatry* 146(12):1598-1601. 1989.
23. Menza MA, Murray GB, Holmes VF, Rafuls WA: Controlled study of extrapyramidal reactions in the management of delirious, medically ill patients: Intravenous haloperidol versus intravenous haloperidol plus benzodiazepines. *Heart and Lung* 17:238-241. 1988.

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THE ANNUAL MEETING OF THE AMA

REPORT OF THE SCMA DELEGATION

DONALD G. KILGORE, JR., M. D.*



The AMA House of Delegates met in Chicago on June 21-25, 1992. There were 435 delegates seated initially, which included the return of the American College of Surgeons. The House voted to seat a delegate from the American Fertility Society, bringing the total to 436. One organization, the American Society of Clinical Pharmacology and Therapeutics, failed to meet the criteria for continued representation and will be dropped from the roster of voting delegates. The delegates considered 104 reports and 311 resolutions making this the largest agenda in the history of the AMA House of Delegates.

President's Address: The outgoing president of the AMA, Dr. John J. Ring, gave his annual report entitled, "Medical Professionalism: We are on the Right Road." He said that in his travels over the past year he had been gratified to see that medical professionalism was still very important to doctors at all levels of practice in America. He also reported that the AMA was seen to be more open, less confrontational, and more willing to listen to everyone's point of view. He stated that he was proud of our work in health care reform and that Health Access - America continued to champion medicine's responsibility to care for all citizens of our country without regard to their ability to pay. He stated that bureaucrats have encouraged us in the past to take competitive positions against one another and forget that patient and government regulation has intruded on the doctor/patient relationship. But, he stated, we have shown to the entire world that we are not vendors, we are not entrepreneurs, that we are not even business men and women with high standards. On the day that we became physicians, we willingly gave up prerogatives that even the most honest and ethical of business people enjoy and utilize everyday. He said that we did that because of ultimate objectives. The ultimate objective of business is profit, and that is as it should be, but the ultimate objective of medicine is beneficence, healing, and the good of the patient. He concluded by telling us once again to treasure our professionalism and to count as only real enemies those enemies physicians have always fought—disease, pain and human suffering.

In his inaugural address, the incoming president of the AMA, Dr. John Cloud of New York, spoke to us about physicians who make things happen. He said that one of the things he had learned since his first meeting of the house of delegates was that there were three types of people, people who made things happen, people who watched things happen, and people who wondered what happened. He stated that many of these people who make things happen are not as prominent as those that we all know, such as Albert Schweitzer, or

some of those who are leaders in research or other major developments in medicine. He said most hard working physicians spend a lot of their time in activities that never do make headlines. They comfort their patients and take a little extra time to make them understand the problems with government regulations or help the patients understand the problems that arise from illness or just to take time to talk to their patients and to give them reassurance, respect and human kindness along with sound medical information. But, he said, these are physicians that do not make headlines; they do work long hours, but their biggest reward is the caring, connected, compassionate part they play in the lives of their patients, their neighbors, and their communities. He quoted a Chinese proverb which says, "If you tell people something they don't remember, if you show them they might remember, but if you involve them they will remember, because they understand." He urged all of us to get involved in our communities and he gave as an example Los Angeles County, where the medical society was reaching out to several physicians whose offices were lost during the recent riots. Los Angeles County Medical Association is leading a drive to restock, refurbish, and refurbish medical offices that were destroyed, right down to the medical records and the text books. But he said that some of the examples aren't as obvious as this, that individual physicians can make a difference if we involve ourselves and involve other people. Because involved physicians don't have time to complain about their problems, they're too busy with patient care, they're too busy finding solutions to professional concerns, and they're too busy making an impact on the health of the public.

South Carolina Medical Association Delegation: Our delegation continued to be a hard-working group. Except for Saturday morning when we started at 8:00 am, our days began at 7:00 am and continued far into the night. It was difficult to do all the necessary work as well as to meet the demands of Randy Smoak's campaign, but I think we managed very well. As all of you have heard, Randy was elected to the Board of Trustees of the American Medical Association. He and two other trustees received a total of 313 votes, which was much more than the other two trustees who were eventually elected. I think we can be proud of Randy's hard work and also proud of all the people who worked with him. Our delegation included Randy Smoak with Sandra; Don Kilgore; Walt Roberts with Nancy; Dan Brake with Sue; Charlie Duncan; Chris Hawk; Roger Gaddy and Beth; Steve Imbeau; Bart Barone and Topsy; Ed Catalano and Susie; Nelson Weston and Suzanne; and staff members Bill Mahon and Barbara Whittaker. Debra Milling represented the residents; March Seabrook attended representing the Young MD Sec-

*8 Memorial Medical Drive, Greenville, SC 29605.

tion; and Tim Mott, Brian Polsky, Earl Lakier, John Herlong, Craig McCabe, Greg Oakhill and James Sheffield represented our medical students.

House of Delegates Activities: The House of Delegates considered a large number of issues. The most prominent of these was probably the Medicare Physician Payment Reform (RBRVS). The board of trustees submitted an information report detailing AMA's response to the Medicare Physician Payment Reform. The report's conclusion recognized that for many physicians, the new Medicare payment system has brought steep payment reductions and the need to adopt new payment and coding policies. The report also emphasized the importance to physicians of membership in organized medicine and reported that 82 percent of Congress gave support of the restoration of \$10 billion to the Medicare budget which resulted from the 1991 campaign by organized medicine for reversing the proposed conversion factor.

The House received 10 resolutions and adopted the following policy statements to guide the AMA's future actions.

• **RBRVS:** It was resolved that the AMA take all necessary legal and other action to address the inequities in the implementation of the RBRVS, including but not limited to (1) reduction of allowances for new physicians, (2) the non-payment for EKG interpretation, (3) defects in the geographic practice cost indices and area designations, (4) inappropriate resource-based relative value units, (5) the deteriorating economic conditions of physicians' practices disproportionately affected by the Medicare payment system, (6) the need for restoration of the RBRVS conversion factor to levels consistent with the statutory requirement for budget neutrality, (7) the inadequacy of payments for services of assistant surgeons, and (8) the loss of surgical trade benefits for many outpatient surgical procedures. It was further resolved that the AMA seek an evaluation of stress factors (i.e., intensity values) as they affect the calculations of the Medicare Payment Schedule seeking appropriate, reasonable and equitable adjustments, and descriptors and other examples of services used to determine RBRVS values and payment levels and seek adjustments so that the resulting values and payment levels appropriately pertain to the elderly and often infirm patients. It was also resolved that the AMA evaluate the use of the RBRVS on the calculation of the work component of the Medicare Payment Schedule and make certain that the concept of the work component continues to be an appropriate part of a resource-based relative value system. It also resolved that the AMA seek to assure that all modifiers including global descriptors are well publicized and include adequate descriptors. It also resolved that the AMA take steps to assure that the relative value

units in the Medicare Payment Schedule, such as nursing home visits, are adjusted to account for increased resources needed to deliver care and comply with federal and state regulatory programs that disproportionately affect these services and that the Medicare conversion factor be adjusted and updated to reflect the increased overall costs. It also resolved that the AMA support the concepts of HR4393, the Medicare geographic data accuracy act of 1992, and S2683, the Medicare Geographic Data Accuracy Act, for improving the accuracy of Medicare Geographic Costs Indices and to work with Congress to assure that GPCIs are updated in as timely a manner as feasible and reflect actual physician cost including gross receipt taxes. It also resolved that the AMA ask HCFA to refine relative values for particular services on the basis of valid and reliable data and that it rely on the AMA specialty societies RVS Updating Committee for assignment of relative work values to new or revised CPT codes and any other tasks for which the RVC can provide credible recommendations. It also resolved that the AMA oppose application and expansion of the current Medicare RVRBS to private sector payors.

• **Self-Referral:** Another item which brought up much discussion was self-referral. The AMA adopted the policy that medically necessary referrals by a physician to an off-site facility in which he or she has a financial interest is ethical, if the patient is fully informed of the ownership interest and the existence of any other available alternate facilities.

• **HIV Infections and Physicians:** The House adopted a series of positions on a wide variety of related issues:

—That a panel of experts be assembled to translate available look-back information into a meaningful statement on the estimated true risk of transmission and the need, if any, for additional studies.

—That explicit consent should not always be required prior to routine HIV testing. However, pre-test counseling must be conducted for patients receiving routine HIV testing. Post-test information in the form of a simple verbal or written report and interpretation must be given for negative results. Pre-test/post-test counseling must be conducted for patients when HIV is the focus of the medical attention or when a history of high-risk behavior is present; full post-test counseling is always required when test results are positive.

—That any HIV-infected physicians should disclose his or her sero status to a state public health official or local review committee. Ideally, membership on this review committee should include the patient's physician, an infectious disease specialist not involved in the care of the patient, an epidemiologist, and others as appropriate. Committee members should be unbiased and at least some of the members

should be familiar with the performance of the infected physician. This review committee may recommend to the appropriate authority restrictions on the physician's practice if they believe there is a significant risk to the patient's welfare. The review committee is also responsible for monitoring adherence to universal precautions and must also monitor the physician's clinical competency. Those who do not abide by imposed restrictions should be reported to appropriate authorities, such as the State Licensing Board.

—That any physician who performs patient care procedures that pose a significant risk of HIV infection should voluntarily determine his or her sero status at intervals appropriate to risk.

—That the AMA re-affirm its previous policy and remain opposed to mandatory testing. It also resolved that the AMA re-affirm its previous policy to remain opposed to HIV testing as a condition of medical staff privileges.

• **Health Care Workers' Safety:** The next resolution involved health care workers' safety, and resolved that employees of the health care system who might be at risk of contacts with infected blood or other body fluids must be afforded all available and practical protection to assure a low level of personal risk of occupational infection. Universal precautions and all other applicable infection control measures must be understood and consistently used to safeguard the health of personnel. Physicians should be aware of the legal requirement to adhere to the new OSHA regulations on bloodborne diseases. It was resolved that because health care workers who are immuno compromised because of HIV infection or other causes are especially susceptible to tuberculosis infection, HIV-infected health care workers should be aware of the finding in report OO of the Board of Trustees, Multiple Resistant Tuberculosis, and the preventive diagnostic and therapeutic recommendations in that report. It also resolved that AMA re-affirm its previous policy in exploring the feasibility of developing a voluntary office visitation program to assess the policies, procedures and education programs that are in place concerning prevention of HIV transmission. This effort would include exploring the feasibility of developing minimum guidelines for physicians' offices.

• **Patient Concern and Protection:** It was resolved that the AMA re-affirm its previous policy and continue to enhance its campaign to educate patients on the extremely small risks of physician-induced HIV infection. Public education should include information about the right of transmission, the effectiveness of universal precautions, and the efforts of organized medicine to ensure that the patient's risks remain immeasurably small. This program should include health care worker education, as appropriate, and methods to manage patient concern about

HIV transmission in medical settings.

• **Organized Medicine's Role in Health Care Policy Development and Implementation:** Several resolutions were submitted dealing with the ability of physicians to act collectively and to negotiate. After much debate, the House adopted the following substitute resolution: "Resolved, that in order to maintain the role of physicians as patient advocates there should be appropriate legislative, regulatory, and judicial action providing for formal physician organizational involvement in all areas of public and private sector health care policy development and implementation. These shall include, but not be limited to (1) review of quality and appropriateness of care, (2) appropriateness of payments and fees, (3) negotiation of reimbursement and predictability of health care costs. (4) It should not exclude other areas of legislative or regulatory activities affecting physicians."

It was further resolved that the AMA continue to seek at the highest of priorities the necessary changes in the anti-trust laws to permit involvement of organized medicine in the negotiating process which is inherent in the development and implementation of all areas of health care policy. It was further resolved to re-affirm the present policy of the House of Delegates that the AMA shall not endorse or advocate price fixing in any form or budget predictability achieved by expenditure targets, budget caps, or global budget limits. Finally, it was resolved that the Board of Trustees establish an Ad Hoc Technical Advisory Committee to help explore and define the options and activities necessary to achieve the policies set forth by the alternative approaches and innovative concepts such as mandatory membership in state or national medical societies. It may be necessary to allow the voice of medicine to speak with maximal authority. The board is expected to report back to the House of Delegates at the 1992 interim meeting on the activities and progress made relating to the provisions of this resolution.

• **Health Access America:** The board submitted two reports and the House received 12 resolutions on issues surrounding the provision of Access to Health Care and recent proposals described as "pay or play." The board concluded that Health Access America had enabled the AMA to provide a leadership role and to be at the forefront of health care reforms in this country. The board presented several recommendations designed to increase and strengthen the AMA's Health Access America proposal which were amended by the House of Delegates. The Board of Trustees recommended that the AMA seek to have discussions with the American Hospital Association, the Pharmaceutical Manufacturers Association, and other relevant national organizations regarding the development of guidelines for the release of price information on hospital charges, drugs, and medical devices to physicians and the public, and that the

AMA analyze the impact of marketing new technologies before adequate clinical trials on overall health care expenditure growth and develop recommendations, as appropriate, to address the effect of such marketing activities on rising health care expenditures. The AMA adopted the following policy modifications to Health Access America:

(A) **Employer Required Insurance:** Employers who fail to provide the required coverage shall be subject to a penalty and to payment for eligible health care costs incurred by an employee or dependent.

(B) **Health IRA/Tax-Preferred Plans:** When employers and employees reach a voluntary agreement to increase the deductible beyond the AMA minimum benefits plan, tax incentives should be provided to encourage contributions to Health IRAs or to similar tax-preferred plans.

(C) **Special Assistance to Small Employers:** Small employers shall receive a refundable tax credit for premium amounts for the required minimum benefits policy which exceed a designated percentage of payroll wages and before tax income.

(D) **Uniform Electronic Billing:** Physicians shall be provided incentives to switch to uniform electronic billing in a uniform format within a designated period of time. No physician should ever be penalized for not adopting electronic billing systems.

(E) **Managed Care:** Physician-based managed care is an option that some purchasers may choose. It should be one choice in a pluralistic system and should comport to the following key principles which are intended to supplement existing AMA policy on health managed care. Managed care programs should compete openly and equally in the health care market with other delivery systems. Individual preferences should be the sole determinant in the growth in any type of delivery. Reimbursements of managed care programs should be easy to administer, promote quality health care, occur in a timely fashion and be viewed as fair by all concerned parties.

(F) **Part-Time Workers:** All employers shall be required to provide their part-time workers with an insurance voucher equal to a designated percentage of the worker's gross pay. This voucher would be redeemable toward the purchase of a private sector health insurance policy meeting the standards of the AMA minimum benefit plan for the worker and his or her family.

The AMA Board of Trustees should continue to analyze additional cost containment options for possible inclusion in Health Access America as appropriate.

• **National Practitioner Data Bank:** The board heard considerable discussion on this controversial issue and then adopted a recommendation that the AMA shall continue to vigorously pursue remedial action to correct all operational problems with the National Practitioner Data Bank.

• **CLIA:** The final item which provoked much discussion was The Clinical Laboratory Improvement Act of 1988. Several resolutions were adopted as follows:

—That the AMA continue to vigorously pursue legislative, legal or consultative action to insure more appropriate placement of tests into a broadened waived category under CLIA 88, to not further impede the timely provision of quality care.

—That the AMA continue to vigorously pursue the institution of just cause and due process unto all CLIA 88 investigation enforcement procedures, and that the AMA continue to vigorously pursue appropriate action to eliminate unannounced inspections under CLIA 88.

—That the AMA seek extension of the response periods for fining for non-compliance, to allow physicians adequate time to fully respond to actions initiated by HCFA under CLIA 88.

—That the AMA work to preclude disclosure of preliminary nonfinal information related to CLIA investigations and block the dissemination of misleading information.

—That the AMA monitor potential effects that CLIA 88 will have on the quality and the cost of health care.

—That the AMA aggressively pursue appropriate action so that physicians will pay only a proportionate share of cost implementing CLIA 88 commensurate with the volume of testing they perform.

—That the AMA, with state medical and national medical specialties societies, take immediate action to cause HCFA to publish the deeming regulations under CLIA 88.

—That the AMA, with state medical and national medical specialty societies, take immediate action to assure that applications for deemed status under CLIA 88 are processed expeditiously and that potential accrediting organizations capable of complying with the regulations are granted deemed status as quickly as possible.

—That the AMA, with state medical and national medical specialty societies, take immediate actions to cause HCFA to delay sending billing for laboratory certification fees until at least 60 days have passed from the time that at least one alternative private sector accrediting body has been granted deemed status.

—Finally, that the AMA, with state medical and national medical specialty societies, publicize information about the Commission on Office Laboratory Accreditation (COLA) and encourage all physicians to seek clinical laboratory accreditation through COLA in lieu of federal or other government certification.

Other matters have been summarized in *AM News*. I appreciate the opportunity of serving as a delegate from South Carolina and I hope that we represented your viewpoint to your satisfaction.

Editorials

GRASS ALWAYS LOOKS GREENER ON THE OTHER SIDE

The following guest editorial is reprinted with permission from The Country Doctor column in The Cheraw Chronicle. Guest editorials reflect the opinions of the authors and not necessarily the opinions of the Editorial Board and the SCMA Board of Trustees.

This piece is an expression of personal opinion written in response to a request from a patient, a businessman in Cheraw, to comment on the general theme of the health care crisis and what needs to be done.

To undertake the task of addressing the health care dilemma in America necessarily brands the writer to be an egotistical fool. Why? Because there are as many thorns in the health care issue as there are quills in a porcupine's hide.

There is no easy solution to the health care problem. While there are many facets to it, the basic problem with the health care problem is simple. *There are too many non-medical people who have interjected themselves into the patient-doctor relationship.*

America, at present, still has the best medical care system in the world, expensive though it may be.

And now as we approach national elections, the siren sounds of the socialistic schemes of Britain and Canada are as dangerous to good medical care as the songs of the legendary Rhine maidens (Die Lorelei) in luring the unwary boatman onto the rocks, shoals and swift currents of destruction.

We in America see what has happened to Socialism and Communism in Eastern Europe and Russia. We see the miserable failures of the Russian satellite countries planted over the world. Cuba, 90 miles off the U.S. mainland, is in the throes of economic chaos while those Cubans who believe in capitalism and who made it to South Florida flourish, are living proof of our superior economic scheme, the fruits of which we in America enjoy.

The attempt to establish a government run medical system in America might be viewed hopefully as the last convulsive expenditure of energy of the liberal politicians in this nation who have taken "second wind" from Harrison Wofford's having won a Senate seat in Pennsylvania by riding the health care issue.

If the English system is so great, why then does a patient requiring cardiac surgery have to wait one year from the time of diagnosis until the surgery can be accomplished when the time of such a wait in America is less than one week? If the Canadian system is so desirable, why do Canadians flood across the U.S. Borders to pay dollars from their own pockets for medical care in the Northern United States—receiving their care in a timely fashion rather than waiting for care to be provided by their own system?

The question of a National Health Plan poses the question. Have you ever seen the Federal government do anything in an efficient manner time-wise or money-wise? Don't expect a government medical system to be any different should it come. It will be worse—with more bureaucracy, more paperwork, more delay, more costs. The problem with a bureaucrat is he doesn't know anything; but worse, he doesn't realize that he doesn't know anything—and he doesn't have to respond in a timely fashion.

The great problem now with America is that not only in medicine but in many other areas of our economy we have regulated ourselves out of business by providing too many jobs for bureaucrats. They produce nothing. We have, at the same time, cost jobs of those

workers who do produce. America cannot compete effectively in the international trade wars because we have tied our own hands with red tape artfully applied by regulators — our own governmental bureaucrats.

Energy, innovation, and ingenuity of the American workers have historically kept America ahead of other nations. The bureaucrats, those unelected policy-making people in government, have hobbled American business and are swiftly sucking the life blood from the accomplishees and producers in this nation. They take away one's incentive to push ahead. Once it was a maxim that give an American a chance and he will produce. He will find a way to get a job done in better fashion. When will we learn to cut the red tape, to be done with the bureaucracy and let the American worker come alive and be a force on the worldwide economic stage again.

The fixing of our own medical care system begins by not putting it in the hands of government nor in the hands of the insurance companies nor in the clutches of bureaucrats. Put the problem back where it belongs with the doctors and the patients. The marketplace economics will function if only given a chance. Sadly, their chance may not come because to quote Milton Friedman, "the public may favor privatization of medical care but the bureaucracy that currently administers today's structure of medical care is politically powerful and would violently oppose it." Mr. Friedman, a world renowned economist, cuts deeply to the heart of the matter with this statement.

Simply put, today's medical care is no longer in the hands of the patient and his doctor. The big money people, insurance compa-

nies, the medical industrial complex, the major drug producers, the politicians, and the government bureaucrats have tasted the power of health care dollars. They like the taste. They are not likely to give up easily. They may destroy the goose in their greed to grab the golden eggs.

Who suffers? The patients and the doctors you say. Yes, the medical profession will suffer. It is already beginning to suffer because many of the brightest young students no longer seek medicine as a career, not necessarily just because they fear the lack of income, but because of having the insight afforded them by their bright minds. They do not want to be slaves to a bureaucratic system rather than willing servants of their patients. The patient, after all, has to be the ultimate power in the medical care scheme. The patient is medicine's reason for being. The patient should have free access to his doctor. If the doctor does not perform, the patient can forthwith fire the doctor. It doesn't work this way when an HMO, an insurance company or the government picks one's doctor, one's nurse, and one's pharmacist.

This scenario sounds a bit impossible, you say. Yes and it may be, but it can happen if we do not keep on guard. We need to keep the brightest young brains in medicine. Would you want a cardiac surgeon (who stood at the bottom of his class in medical school) operating on a loved one? That could happen if the politicians and the bureaucrats and big money interests plan your future medical care.

Joseph K. Newsom, M. D.
PO Box 867
Cheraw, South Carolina 29520

This document has been published, in part, in "GHS Medical Education & Research-Research News," a non-copyright research newsletter of Greenville Hospital System, in the March, 1991 edition. Guest editorials express the opinions of the authors and do not necessarily express the opinions of the Editorial Board and the SCMA Board of Trustees.

— CSB

RESEARCH, PATIENT CARE AND THE PRACTICING PHYSICIAN

Research is the building block on which all clinical science is founded. While great argument can be made that much of clinical medicine is an "art" and based on experience rather than established fact, almost all the major advances in health care in this century have arisen from either critical investigation or from scientific observation. Virtually no argument can be mounted that the modern technology and therapeutic advances of the 1990s arose from anything other than dedicated intellectual activity—at the basic science level and in field trials at the clinical level. Research, in its myriad forms, provides us with both the tools and the knowledge to apply clinical health care to people, as we do today.

But there is another aspect to research that is important both to the health care profession and to the public and that is the similarity between research and clinical practice. The credo of the researcher has always been to seek only the truth and to define that truth in terms that are consistent, reproducible and interpretable to and by others. The reliability and predictability of research findings are based on an assumption that physical and chemical laws are constant and totally reliable. A biochemical reaction that occurs in one laboratory, therefore, should occur in exactly the same way, given the same circumstances, in another laboratory. However, while the overt behavior of people obeys individually no such laws, disease patterns and abnormalities of both physiology and anatomy do, and while less predictable than biochemical reactions in a laboratory, do also follow patterns. Every complaint, every dis-

ease, every abnormality becomes a research project for the health care worker and sorting fiction from fact, defining an ultimate truth about the patient's problem, is and should be no less a scientific endeavor than determining the facts in a research project.

It is for this reason that health care providers must understand research methodology: that what is apparent may not be real, that the results of a laboratory test must be interpreted in the light of limitations of the method by which it is determined, that actual observation of past practices may provide a different insight than mere recollection and that in both behavioral and biological sciences, normals are identifiable in ranges and not at specific points.

Failure to understand these principles provides us with witch doctors, pseudoscientists and healers who employ untried and usually ineffective remedies. Including a belief that the psyche does moderate all human observation in no way obviates the need for rigid pursuit of the facts; nor does perseverance in the pursuit of scientific health care prevent the employment of both compassion and empathy on the part of the health care provider. But all patients, first and foremost, wish to have a correct diagnosis and a scientifically sound therapy. The treatment of patients must be based on intellectual analysis, scientific principle and professional integration of the facts as best they can be ascertained. Health care workers must both understand and do "research" to achieve that goal.

Participation and actual conduct of "research" should therefore fall easily into the modus vivendi of all physicians because that

is what they do every day. There is much that all of us could learn from the experiences of physicians whose major emphasis is on patient care and they are better equipped, I suspect, than most of them think, to carry out projects which may on the surface seem frightening. There is increasing demand by the public for both outcomes research and long range results, among others, and no one is better equipped than practitioners to apply scientific method to their own patient populations. We must have those results now and in the future, done by us, if we are to preserve the scientific credibility of medicine. It is better that we do it than have it imposed upon us by those less familiar with patient care than we. We also owe it to the public to ascertain

that the therapies we offer have indeed been properly tested in the workplace by those people who understand the workplace, a condition not always met in today's rapidly changing environment. If we are to continue to have any control over the treatments we offer, practicing physicians must add the study of patient populations to their list of commitments, however long that list may already be.

Robert G. Brame, M. D.
Academic Chairman, Ob/Gyn
Greenville Hospital System
701 Grove Road
Greenville, SC 29605

Letters to the Editor

Note: The author insisted that we use his initials only.

To the Editor:

A thousand kudos for Betty Newsom, Librarian.

This busy and industrious woman, Librarian at the Waring Historical Library in Charleston, is largely responsible for selecting, month after month, the illustration for the front cover of *The Journal of the South Carolina Medical Association* and is completely

responsible for digging up the historical material to explain the cover.

All the physicians in South Carolina are indebted to her.

J. P. G., M. D.

I second the above! The cover stores are, truthfully, a history of medicine in South Carolina.

—CSB



SCMA NEWSLETTER

A PUBLICATION OF THE SOUTH CAROLINA MEDICAL ASSOCIATION
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August 1992

HIGHLIGHTS OF JULY 16 BOARD OF TRUSTEES MEETING

The board voted to recommend to the State Board of Medical Examiners that they grant a limited license and waive the SPEX exam for physicians who request such a license solely to work in a free clinic and who meet the other requirements for licensure.

Due to the election of Randolph W. Smoak, Jr., MD, to the AMA Board of Trustees, the SCMA board elected J. Chris Hawk, III, MD, to the vacant AMA Delegate position, and John W. Simmons, MD, was elected to fill the resulting AMA Alternate Delegate position.

The NC Medical Society and the Georgia Medical Association have joined the SCMA in its resolution to prohibit beer ads on TV. The joint resolution will be submitted to the AMA Interim Meeting.

The board voted to work with DHEC in an attempt to change the regulations regarding the signing of verbal orders in hospitals.

The board also voted to contribute to the scholarship fund at Presbyterian College in memory of Mike Jarrett.

The board nominated William Craig, II, MD, to the vacancy on the PRO Board due to the resignation of John W. Simmons, MD. In addition, the board voted to support the Alliance for SC Children in its public information campaign to educate parents about the need to immunize their children. ☐

MEDICARE UPDATE

Outpatient Observation: A new Medicare rule stipulates that outpatient observation services are covered only if there is a *written physician order* which specifies that the patient is to be provided observation services **as an outpatient**. *An order to "admit for observation" would be acceptable only if the context of the medical record makes it clear that what was intended was the provision of observation services to the patient as an outpatient.*

UPIN Update: Services such as office visits, emergency room visits and ambulance transport that are beneficiary initiated do **not** require a referring physician name and UPIN (blocks 17, 17A). Also, follow-up hospital visits, anesthesia and non-diagnostic surgical procedures do not require blocks 17, 17A be completed. **You should not fill in these blocks if not required.** HCFA can order Medicare to reject claims with blocks 17, 17A filled in incorrectly and Medicare is under no obligation to inform physicians.

Health Professional Shortage Areas (HPSAs): A reminder that effective January 1, 1991, physicians who

render covered Medicare services in all HPSAs are entitled to a 10 percent incentive payment. The actual service **must** be performed in the designated area to be eligible for these payments. Refer to the June/July, 1992 Medicare Advisory for HPSAs and modifiers.

Electronic Billing: The Health Care Financing Administration (HCFA) has provided the SCMA with a memo that states "HCFA has adopted a goal to virtually eliminate the use of paper transactions between providers and the Medicare contractor that pays bills." There are no requirements for physician electronic billing at this time; however, the following statement clearly shows HCFA's intent and you may wish to consider investigation of electronic billing if you have not already done so.

There are many private vendors which you could contact regarding electronic billing. If you wish to work directly with Medicare, there is no monthly or other charge for electronic billing. *For information, please call Cathy Caudle at Medicare in Columbia at 788-0222, ext. 1402.* ☐

MEDICAID UPDATE

Medicare/Medicaid Crossover Claims: Each Medicare/Medicaid crossover claim form (Form SHHSFC 208) must be accompanied by a **separate** Explanation of Medicare Benefits (EOMB). Multiple 208 forms may not be submitted with only one EOMB. All 208 forms received without an EOMB will be returned to the provider. Please refer to your May 26, 1992 Medicaid Bulletin for complete instructions on Form 208.

Medicaid Remittances: Medicaid remittances are mailed every Thursday (except when a state holiday falls on a Thursday) from Columbia. Most providers receive their Medicaid payments on Friday; however, occasional delays in the postal service may result in late delivery of your Medicaid check. Please allow one week from the scheduled date of payment before requesting a reissued Medicaid check, as oftentimes a delayed payment will reach a provider's office by the end of the following week.

CHAMPUS UPDATE

The Medical Society of Virginia Review Organization (MSVRO) is South Carolina's federally designated Utilization and Quality Control Peer Review Organization (PRO) for CHAMPUS.

For Preadmission/Preprocedure Review for Specified Procedures, call the Preauthorization Line, 1-800-533-1745 weekdays from 8:30 am to 5:00 pm EST, excluding holidays.

If you have questions or concerns about CHAMPUS review policies and procedures, *contact CHAMPUS Program Manager Carol T. Wingo at 1-800-292-6060.* □

THE AMA AND OSHA

The AMA has asked Congress to require OSHA to make changes in the implementation of the bloodborne pathogen standard. The AMA specifically asked the House Labor/HHS Appropriations Committee to require OSHA to:

- reconsider the current penalty structure,
 - conduct a cost/benefit analysis of the standard as it applies to physician practices,
 - reduce the 30-year record keeping requirement, and
 - adopt a one-year grace period for physicians who are making good faith efforts to comply with the standard.
-

CLIA UPDATE

Reminder: You must include your CLIA registration number (in area 24K of the HCFA 1500 form) **when you bill Medicare** for lab services as of September 1. Medicaid will not require your CLIA registration number on the HCFA 1500 form. You will be contacted in the near future regarding Medicaid requirements.

Correction: The CLIA telephone number to call for your lab registration form is 1-404-331-0083. The number published in the June Newsletter was incorrect.

CLIA Office Visits: The AMA, in comments on the final CLIA regulations, characterized unannounced HCFA inspections as disruptive for patients, especially those waiting for test results. The AMA recommended that inspectors treat physician's offices differently from independent reference labs and notify physicians ahead of time. □

OIG HOTLINE

If you are unsure about what constitutes a questionable incentive arrangement with a hospital, you can call the Health and Human Services OIG (Office of the Inspector General) Hotline at 1-800-368-5779. □

OSHA UPDATE

As was mentioned in last month's newsletter, the SC Department of Labor has produced a document entitled "Enforcement Procedures for Occupational Exposure to Bloodborne Pathogens." The document contains detailed information clarifying the regulations and it also discusses the inspection procedures.

We have also received a number of questions regarding eyewash stations. While this regulation does not provide specific recommendations for eyewash facilities, this information is contained in a separate memo. The title is OSHA Information Memorandum: 82 x 57 Rev., Subject: Guide for Citing Eyewashes and Showers.

If you would like a copy of either document, please contact Ms. Dana Woods at the Department of Labor in Columbia at 734-9661. □

PRO UPDATE

When a Carolina Medical Review (CMR) Physician Consultant questions a case for a DRG, utilization or quality issue, the responsible physician is given an opportunity to discuss the issue by telephone with another CMR Physician Consultant. A similar opportunity is afforded the provider for a discussion with an appropriate CMR representative.

HCFA regulations require that this discussion, if requested, occur before a final decision is made. Instructions in the 30-day letter state that the telephone call must be **specifically requested** and will be arranged prior to the final Physician Consultant decision.

CMR sometimes gets responses from physicians stating that if his/her letter does not resolve the issue, a CMR Physician Consultant may call to discuss the case. This request to discuss the issue after the final decision has been made is outside the intent and purpose of the regulation and cannot be accommodated. □

PRACTICE OPPORTUNITIES FAIR

To assist communities, hospitals and private practices in their efforts to recruit and retain physicians, the SC Area Health Education Consortium (SC AHEC) will sponsor their 7th Annual Practice Opportunities Fair. The fair is designed to help residents identify and evaluate practice opportunities throughout SC. It will be held August 21-22, 1992 at the Embassy Suites Hotel in Columbia. During the two-day event, residents from all of the state's teaching hospitals (and graduates of MUSC and USC in

PHYSICIANS REQUIRE CERTIFICATE OF NEED

On July 10, 1992, Governor Carroll Campbell signed the Certificate of Need and Health Licensure Act into law. This act is aimed at strengthening the state's Certification of Need Program by controlling health care costs through elimination of unnecessary duplication of services and the unnecessary expansion of medical facilities and equipment.

The amendments create a 14-member health planning committee to oversee the development of a State Health Plan. The act also includes a requirement for physicians in private practice to obtain a Certificate of Need prior to making a financial obligation for major medical equipment.

Any physician, physician group or other entity who has previously leased or purchased equipment whose total project cost is in excess of \$600,000 is required to apply for an exemption from the SC Department of Health and Environmental Control (DHEC) within six months from July 10, 1992. The application for exemption must include a project description in enough detail to be project specific and should include the type of equipment, location, cost and ownership. Additionally, the last year's utilization is required. Medical equipment lawfully leased or purchased before the effective date of this act will be exempted by DHEC if the application for exemption is received during the six-month period. Also, any group that received an exemption prior to January 1, 1992, but has not yet implemented the project, must renew the exemption by supplying the same information to DHEC. Projects that were exempted after January 1, 1992, but were not implemented by July 10, 1992, must now obtain a Certificate of Need from DHEC, prior to making the financial obligation for the equipment.

Should any questions arise, you may call Mr. Leon Frishman or Mr. Jerry Paul in Columbia at 737-7200. □

out-of-state residency programs) visit with representatives of various hospitals and communities to discuss locations, costs, assistance and other variables associated with establishing a practice in SC.

To register for the 7th Annual Practice Opportunities Fair, call Mary Chesshire at (803) 792-9422 or Becky Seignious at (803) 792-4439. □

DO YOU PROVIDE FREE MEDICAL CARE?

South Carolina Code section 33-55-210 (B) provides limited immunity from liability (physician is immune from liability except for damages caused by gross negligence or willful misconduct) in situations where the physician renders medical services voluntarily and without compensation or the expectation or promise of compensation, so long as the parties agree *before* services are rendered that the care is to be provided free of charge.

To assist physicians in complying with the immunity statute, the form below should be filled out for each patient to whom charitable services are provided each time the patient is seen.

CAPSULES

Governor and Mrs. Carroll Campbell have been named Child Advocate of the Year by the SC Chapter of the American Academy of Pediatrics. They were recognized for their contributions to the health and well-being of South Carolina's children. **Walton L. Ector, MD**, received the Career Achievement Award for his superior accomplishments in the field of medicine, and the President's Award was presented to **William M. Sappenfield, MD**, for his outstanding service to the chapter. The SC Chapter of the AAP recently concluded its annual scientific meeting at Hilton Head Island.

Richard K. Harding, MD, has been named the medical director of the Richland Memorial psychiatric hospital, in preparation of its opening next spring. Dr. Harding is chairman of the SCMA Committee on Mental Health.

STATE OF SOUTH CAROLINA)

COUNTY OF)

ACKNOWLEDGEMENT OF MEDICAL SERVICES WITHOUT COMPENSATION

The undersigned is a patient who received medical services voluntarily and without compensation, expectation or promise thereof. These medical services were rendered by _____, a physician. The facility where these medical services were rendered is _____. This acknowledgement or agreement has been made before the rendering of the medical services by the physician.

Date

Patient's or Responsible Party's Signature

CERTIFICATE OF PHYSICIAN

The undersigned physician certifies that he has rendered medical services voluntarily and without compensation, expectation or promise thereof to the above named individual. The agreement to provide voluntary noncompensated service to the above named individual was made and executed before the rendering of the medical services by the undersigned physician.

Date

Physician's Signature

On the Cover:

19TH CENTURY PLANTATION HEALTH CARE

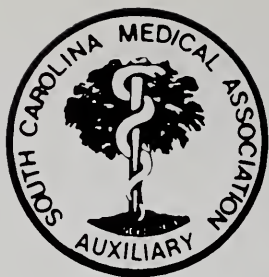
In the 19th century much of the primary health care of plantations was handled by the planter or his overseer. Many of the larger plantations had their own hospitals. While physicians were employed either by fee or contract (early HMOs?) and seemed to be used on a regular basis, much of the care of the less seriously ill was carried out by the women of the plantation.

On this month's cover is a page from the prescription book of Isabella Peyre Porcher. Isabella was the granddaughter of the famous botanist, Thomas Walter, and the mother of Francis Peyre Porcher, M. D., the equally famous physician-botanist whose *Resources of the Southern Fields and Forests* gave much needed advice and aid to the cause of the Confederacy. It is said that Dr. Porcher often credited both his mother and his wife for their help in compiling the book. Dr. John F. Townsend, in a biography of Porcher says:

Porcher's mother was to him a double influence. She gave to him a rich botanical inheritance and she cultivated in him, during his life at Sarazin's Plantation, his love of flowers. She was an outstanding woman and her influence upon his whole life cannot be too greatly stressed. Left a widow at the age of thirty years, with six children to care for, she successfully managed the plantation and each winter took the children to school at Mt. Zion Academy in Winnsboro, SC. Here she placed them under the "great moulder of men, Hudson," who "gave his scholars a splendid groundwork in Latin and Greek."

Isabella Peyre Porcher died in 1890 at Sarazin's Plantation in her 87th year. Sarazin's Plantation was lost when the Santee-Cooper project flooded the area.

Betty Newsom
The Waring Historical Library



Auxiliary Page

1992 AMA AUXILIARY ANNUAL SESSION

The annual session of the AMA Auxiliary was held at the Drake Hotel in Chicago, June 21-24, 1992. South Carolina delegates were Hope Grayson, Betty Hester, Donna Abercrombie, Alice Markowitz, Christine Hepfer and Brenda Cate.

The AMA Auxiliary celebrated its 70th anniversary with a multi-media presentation entitled "The AMA Auxiliary: A History of Leadership, 1922-92" which featured the auxiliary presidents and the world events that marked their years in office.

Antonia Novello, M.D., MPH, Surgeon General of the United States, gave the keynote address at the opening of the House of Delegates. She shared her efforts to tackle alcohol and drug abuse and combat violence in America.

Other noted speakers and performers were Peter Arnet, CNN correspondent and Pulitzer prizewinner, for his coverage of the Vietnam war, who gave a perspective of his experiences. Claire Bloom, famous for her roles as Juliet in "Romeo and Juliet" and Ophelia in "Hamlet," gave an outstanding performance on "Then Let Men Know: A Portrait of Shakespeare's Women." John J. Ring, M.D., President of the AMA, addressed the House of Delegates on the status of the AMA. Also, William E. Jacott, M.D., President of the AMA-ERF, reported how \$2,320,094.48 would be distributed to medical students and medical schools throughout the country.

Highlights of AMA Auxiliary programs to address current health and legislative issues were featured on Sunday, June 21. The program outlined goals of the AMA Auxiliary committees on fundraising for medical education, health promotion, legislative action, and membership services and support. Breakout sessions followed the program which further explored program ideas. On Monday Reference Committee Hearings were held on Organizational Affairs, Health Issues and Bylaws. One of the most important issues to come before the House of Delegates since 1975 was the proposed name change of the auxiliary. After an in-depth study, it was recommended by the Board of Directors of the AMA Auxiliary to change the name to American Medical Association Alliance and to further recommend that a tagline, "Physicians' spouses dedicated to the health of America," be used along with the new name. The ballot vote of the delegation was affirmative and the recommendation of the tagline also passed.

Virginia Johnson, Immediate SCMAA Past President, gave the South Carolina State report for 1991-92. South Carolina was recognized for having 75 percent or more unified membership and for having seven counties who had a 10 percent or more increase in membership. South Carolina also received recognition for having a two percent increase in fundraising for AMA-ERF.

Again this year a highlight for the auxiliary delegation was serving as hostesses to a party for Dr. Randy Smoak, who was running for the AMA Board of Trustees. The delegation was elated to be told on the last day of the session that Dr. Smoak won a three-year term on the AMA Board!

The 1992 Annual Session of the AMA Auxiliary concluded with the installation of Priscilla Gerber as the 1992-93 AMA Auxiliary President on Wednesday, June 24.

Betty Hester (Mrs. William H.)
SCMA Auxiliary President-elect and Chairman of Delegates



President's Page

FACTS FOR PHYSICIAN CONTEMPLATION

1. Multiple drug resistant tuberculosis will be a more formidable epidemic in the next few years than HIV.
2. A physician may not ethically refuse to treat a patient whose condition is within the physician's current realm of competence solely because the patient is HIV positive.
3. Any HIV-infected physician should disclose his or her sero-status to a local review committee.
4. There are 300,000 new infections per year of hepatitis B.
5. Hepatitis B vaccine costs ten times as much in the U. S. as it does off-shore.
6. A white female child born in 1992 has a one in 476 chance of being murdered. A white male child born in 1992 has a one in 275 chance of being murdered, a black female child one in 120 and a black male child one in 27.
7. In 1991, over 2.5 million children were reported abused or neglected.
8. Thirty-five percent of women who seek emergency room treatment are the victims of violence.
9. Twelve rapes occur every hour.
10. An estimated two to four million women are battered each year by their partners.
11. Thirty-seven percent of obstetric patients are physically abused while pregnant.
12. An estimated one to two million elderly people are abused by relative and non-relative caretakers.
13. \$7.5 billion is spent per year in the United States on diet-related programs.
14. One million people per day use tanning parlors.
15. One in eight eighth graders drink alcohol.

There are many problems which confront us. The very best way to help solve these problems is for physicians to organize effectively. Participate. Join the American Medical Association, the South Carolina Medical Association and your local county medical society.

Bartolo M. Barone, M.D.
President

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EDITOR

Charles S. Bryan, M.D.
SCMA, P.O. Box 11188
Columbia, S.C. 29211

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BLINDNESS IN SOUTH CAROLINA

BAXTER F. MCLENDON, M. D.*

Ocular diseases and blindness impose significant cost to our society through lost productivity, disability benefits, rehabilitation, education of visually impaired children and the high frequency of necessary surgical intervention.

Loss of vision in South Carolina is often due to preventable or reversible causes. Many factors account for this unnecessary loss of vision which represents a significant public health problem. The purpose of this communication is to discuss the prevalence/causes of blindness in South Carolina and the various possibilities to reduce the incidence of blindness in South Carolina. A brief discussion of available services for the visually impaired will also be presented.

If the general public and health professions in South Carolina were more aware of the necessity for routine ophthalmic examinations, the incidence of blindness in South Carolina could be reduced. This is especially true for high risk populations such as persons over the age of 65, the undereducated, diabetics, adult African Americans and anyone with a family history of blinding eye disease.¹

The United States Public Health Service in coordination with the National Eye Institute has launched a \$2.7 million National Eye

Health Education Program to help combat two leading causes of blindness – diabetes mellitus and glaucoma. The National Eye Institute, a division of the National Institutes of Health, is mandated to find new ways to prevent, diagnose and treat diseases of the visual system. Recently the American Academy of Ophthalmology has initiated a national Diabetes 2000 Program aimed at the elimination of preventable blindness from diabetes mellitus by the year 2000. In addition, the South Carolina Society of Ophthalmology has established an eye trauma registry which has received national recognition and has become a model for other states.

Population projections indicate that the over age 65 population in South Carolina is growing at a faster rate than the under 65 population.² The incidence of blindness rises dramatically with increasing age³⁻⁶ (Table 1). This is true for cataracts, age related macular degeneration and glaucoma. Physicians should bear in mind that the longer one has diabetes mellitus (Type I or Type II) the greater the risk of developing some form of diabetic retinopathy.

There are at least 65 different definitions of blindness in use throughout the world.⁷ In the USA the acceptable definition for legal blindness is $\leq 20/200$ for distance in the better eye with best correction using the Snellen visual activity chart or a visual field of less than 20

*Address correspondence to Dr. McLendon at 905-B Ribaut Road, Beaufort, SC 29902.

TABLE I (MODIFIED FROM TIELSCH)³PREVALENCE OF BILATERAL LEGAL BLINDNESS ($\leq 20/200$ IN THE BETTER EYE) BY AGE AND RACE FROM A VARIETY OF POPULATION-BASED STUDIES

Age, y	Percent of Subjects							
	Baltimore Eye Survey ³		Model Reporting Area ⁴		Health and Nutrition Survey ⁵		Framingham Eye Study ⁶	
	W	B/O	W	B/O	W	B/O	W	
45-54	0.30	0.90	0.16	0.59	0.0	0.4	0.07	(52-64y)
55-64					0.1	2.0		
65-74	0.57	2.24	0.32	1.20	0.9	3.5	0.82	
75-84	2.11	2.93	0.72	1.74			2.03	(75-85y)
>85	12.50	13.51	2.22	2.79				
	Y - years		W - white		B - black		O - other	

degrees, greatest diameter. Consequently, with multiple definitions of blindness, it is often difficult to compare blindness statistics from various eye surveys or reporting agencies.

The World Health Organization (WHO) has established categories of visual impairment (Table 2) to clarify this confusing array of choices.⁸ WHO defines blindness as a distance vision of 3/60(10/200) or less, which equates to counting fingers at three meters.

METHODS AND CALCULATIONS

In South Carolina there is no statewide blindness registry, unlike Alzheimer's Disease,⁹ nor mandatory reporting of blindness. In fact, there is often a strong lobby not to produce a state blind registry.¹⁰ The state does not have an accurate measure of current numbers or causes for blindness. It is difficult to determine the prevalence rates for causes of blindness as many individuals have several etiologies (combinations) for their reduced vision. In addition, there are currently several different state agencies serving the visually impaired ($\leq 20/70$ - $20/200$) and blind. Unless the lines of communication are kept open this division of services could lead to confusion and duplication of services in an era of shrinking resources.

Although no state eye survey has been done in South Carolina, a fairly accurate estimate

for blindness rates can be made by using national statistics/formulas and surveys done elsewhere. U.S. statistics show there to be 890,000 persons bilaterally blind ($\leq 20/200$) with apparently no differences in the rates by sex.

The current population for South Carolina is 3,486,703,¹¹ while the number of persons age 45 and older is 1,045,347. The number of citizens 60 years and older is 540,955. According to the National Society to Prevent Blindness the legally blind (bilateral) rate in the USA is 312 per 100,000. Of these, 53 percent are estimated to be 65 years and over. Therefore, with a state population of 3,500,000, and a rate of 312/100,000, there are approximately 10,920 bilaterally blind persons ($\leq 20/200$) in South Carolina. South Carolina is known to rank sixth per capita in blindness. This may well be an underestimate due to our disproportional growing elderly population and high African-American population (29.8 percent) in South Carolina.

Senile cataract is still one of the leading causes of reversible blindness, with a rate of 19 per 100,000. Using the population of South Carolina of 3,500,000 and a rate of 19/100,000,¹² the bilateral cataract blind in South Carolina becomes 665. Approximately 15,000 cataract extractions are done annually in South Carolina. Although the number of cataract operations in South Carolina has

TABLE 2
CATEGORIES OF VISUAL IMPAIRMENT ADAPTED FROM THE
INTERNATIONAL CLASSIFICATION OF DISEASES, NINTH (1975) REVISION

Category of Visual Impairment ^a	Visual Acuity ^b With Best Possible Correction	
	Maximum less than	Minimum equal to or better than
1.	6/18 20/70 3/10 (0.3)	6/60 20/200 1/10 (0.1)
2.	6/60 20/200 1/10 (0.1)	3/60 (Finger Counting at 3 Meters) 20/400 1/20 (0.05)
3.	3/60 (Finger Counting at 3 Meters) 20/400 1/50 (0.05)	1/60 (Finger Counting at 1 Meter) 5/300 (20/1200) 1/50 (0.02)
4.	1/60 (Finger Counting at 1 Meter) 5/300 (20/1200) 1/50 (0.02)	Light Perception
5.	No Light Perception	
6.	Undetermined or Unspecified	

a. If the extent of the visual field is taken into account, patients with a visual field radius no greater than 10 degrees but greater than five degrees around central fixation should be placed in category 3 and patients with a field no greater than five degrees around central fixation should be placed in category 4, even if the central acuity is not impaired.

b. For the first four categories of visual impairment, the different lines of figures in each box of the visual acuity columns represent the same level of acuity expressed according to different notations. The first line gives the notation used with the Snellen 6-meter scale (and, where applicable, the corresponding ability to count extended fingers at a set distance); the second line gives the equivalent notation used with the 20-foot scales; the third line gives the decimal notation.

increased in recent years, the number of persons and the relative percentage of the population over age 60 has also increased. Seventy-three and one-half percent of the population over age 60 have some degree of cataract formation often resulting in a visual impairment. Therefore in South Carolina with 541,000 persons over age 60, approximately 398,000 persons over age 60 have some degree of cataract with potential visual impairment.

Age-related macular degeneration (AMD) is now the leading cause of new cases of

blindness in whites older than 60 years. Age-related macular degeneration, usually a bilateral disorder, appears to be a rare cause of blindness in African-Americans. With a state population of 3,500,000 and a rate of blindness of 26 per 100,000,¹² then the number of blind from AMD is 910. The amount of visual impairment from AMD is much greater than this number, which represents the bilateral blind.

Glaucoma, which has a hereditary tendency, is estimated to have a rate of blindness of 28 per 100,000. Using the state population of 3.5

million, the glaucoma blindness figure is 980. This is certainly an underestimate for Blacks who represent 29.8 percent (1,039,884)¹¹ of the state population. In a recent eye survey in Baltimore the age adjusted blind prevalence rates for primary open-angle glaucoma (most common type of glaucoma) were four to five times higher in Blacks than in Whites.¹³ Therefore, if one figures 1,000,00 African-Americans in South Carolina with a rate four times higher than whites, then at least 1,120 Black South Carolinians are bilaterally blind from glaucoma.

In America diabetic retinopathy is the leading cause of new blindness between the ages of 20 and 65. The longer a person has diabetes mellitus the more likely he is to develop some form of diabetic retinopathy. Using the rate of blindness of 15 per 100,000 and a state population of 3.5 million, the number of persons bilaterally blind from diabetic retinopathy is 525. However, this greatly under-estimates the health problem associated with diabetic retinopathy. The author was motivated to prepare this paper after having a 49-year-old disabled diabetic present initially with marked unilateral decreased vision from a vitreous hemorrhage secondary to bilateral proliferative diabetic retinopathy. The patient previously had never seen an ophthalmologist.

DISCUSSION

Unfortunately, the eye care of many patients is sometimes overlooked. Health care professionals are often, justifiably so, more concerned with other more pressing systemic health care problems of their patients. Many high risk patients are simply unaware of the need to seek routine ophthalmic care. However, it should be emphasized that early diagnosis and preventive medicine is certainly the best and most cost effective approach. This is certainly true with ophthalmic problems.

Glaucoma, which is actually a myriad of diseases, can be defined as an elevated intraocular pressure that causes progressive damage to the optic nerve. Unlike cataracts,

once vision is lost from glaucoma, it cannot be restored. Unfortunately the diagnosis of early glaucoma is not always simple. There is no magic number (pressure reading) that distinguishes a normal from an abnormal (elevated) intraocular pressure (IOP). However, the higher the IOP the more likely the patient has glaucoma and will eventually have optic nerve damage. The risk of glaucomatous optic nerve damage increases substantially with age and higher IOP. The most common type of glaucoma, primary open-angle glaucoma, is often asymptomatic and undiagnosed until late, after marked optic nerve damage and significant changes in the peripheral visual field.

Glaucoma is the second most important cause of blindness in the USA and the single most important cause of blindness among Black Americans. It is estimated between 80,000 and 120,000 Americans are blind from glaucoma. Between two and three million Americans have the disease, though half are probably unaware of it. Blacks are at greater risk than Whites, with onset of optic nerve damage at an earlier age and more severe damage at the time of detection. They are often more refractory to most therapeutic interventions (medications, laser surgery, or other surgical procedures). Optic nerve damage from primary open-angle glaucoma is uncommon among Whites before age 50. It probably occurs at least a decade earlier in Blacks, and requires more intensive evaluation at a younger age.¹⁴ Blacks are four times more likely to become blind from open-angle glaucoma than Whites. With the population of South Carolina 30 percent black, the prevalence of glaucoma blindness is higher in South Carolina than the national prevalence.

Age related macular degeneration (AMD) is the leading cause of irreversible central visual loss (20/200 or worse) among people in the USA age 52 or older. The prevalence of severe visual loss increases with age. It is predicted by 1995 approximately 745,000 people over 65 will be blind in one or both eyes from AMD.

Although most people with macula degeneration have the nonexudative (dry) forms of the disease, the majority of patients with severe visual loss from AMD have the exudative (wet) form which occasionally can be helped by laser therapy. Whether or not oral zinc supplementation with antioxidants will prove to be beneficial for atrophic (nonexudative) AMD remains to be conclusively proven.¹⁵

The most common type of cataract (senile), appears to be age related. The prevalence of cataracts increases to about 50 percent for those between the ages of 65 and 74 and to about 70 percent for those over 75. In the United States, cataracts are the major cause of self-reported visual impairment and are the third leading preventable cause of blindness.¹⁶ In most developing countries cataracts are the leading cause of blindness.^{17,18} It is estimated

that about 1.25 million cataract extractions were performed in the USA during 1988. Technological advances occurring over the last 15 years, particularly intraocular lenses, have dramatically improved the quality of visual restoration following cataract surgery. Table 3 lists the leading causes of blindness in South Carolina, the high risk groups for each disorder, and possible preventative measures.

There are 14 million diabetics in the United States and 200,000 (120,000 diagnosed; 80,000 undiagnosed) in South Carolina and all are at risk of developing some form of diabetic retinopathy. Their risk of blindness is 25 times that of the general population. Diabetics are also at greater risk of developing cataracts and glaucoma than the general population. Diabetic retinopathy accounts for 12 percent of all new cases of blindness in the

TABLE 3
MAJOR CAUSES AND PREVENTION OF BLINDNESS IN SOUTH CAROLINA

DISEASE PROCESS	HIGH RISK	PREVENTION
1. Glaucoma	Blacks Over 40 All People Over 60 Family History Diabetics	Dilated Eye Examination with Tonometry Every Two Years ^a
2. Diabetic Retinopathy	Diabetes Mellitus Family History Blacks Diabetics with Hypertension	Eye Exam at Time of Diagnosis Yearly or More Frequently Thereafter
3. Age-Related Macular Degeneration	Over Age 55 Especially Whites	Regular Eye Examination, Amsler Grid Check, ? Zinc Supplement, Laser Surgery
4. Cataracts	All People Over 55 Diabetes Mellitus	Surgical Treatment
5. Eye Trauma	Children Esp. Males Young Adults	Protective Eyewear Seat Belts Educational/Preventive Programs

a. As recommended by U. S. Public Health Service

United States and is the leading cause of new blindness for working age persons. Ten years after onset, 70 percent of diabetics will have some form of retinopathy (proliferative or nonproliferative). Often patients have had diabetes mellitus for years prior to the actual diagnosis (detection). The longer one has diabetes the greater the chances of developing retinopathy.

The American Academy of Ophthalmology's Diabetes 2000 program hopes to reduce the amount of blindness due to diabetes mellitus.¹⁵ If physicians can detect and treat (photocoagulation, vitrectomy, etc) diabetic retinopathy in a timely fashion then we should be able to reduce the incidence of blindness. This will only be accomplished by eliciting the help of the entire medical community. Diabetic retinopathy is often asymptomatic at its most treatable stage. The window of opportunity for the treatment/prevention of blindness from diabetic retinopathy opens and closes.

The leading causes of monocular blindness in South Carolina are trauma, cataracts, and amblyopia. The South Carolina Eye Injury Registry (SCEIR) is sponsored by the South Carolina Society of Ophthalmology, under the directorship of Al Pakalnis, M.D. The Society, composed of over 120 ophthalmologists, hopes to identify the who, what, where, and how of state eye injuries. (Figure 1). The objectives are: (1) To assess the frequency and common patterns of ocular injury in SC. (2) To determine the prognosis of specific tissue injuries. (3) To evaluate the results of various forms of treatment. (4) To reduce morbidity from ocular injury in South Carolina by providing information that will guide prevention and treatment. (5) To educate South Carolinians about ways to prevent eye injuries. (6) To maintain the highest standards of quality ophthalmologic care in South Carolina.

SERVICES AND AGENCIES FOR THE VISUALLY IMPAIRED/BLIND IN SC

The South Carolina Commission of the Blind,

a state agency, has established ten Macular Degeneration Support Groups around the state. These support groups have been so successful they plan to start support groups for diabetic retinopathy and glaucoma. The Commission of the Blind also has limited funding for indigent patients needing ophthalmic services. The Commission is also able to make referrals for home maker instructors, who will actually go into the home for training of the visually impaired.

The Department of Education collects and publishes data annually on public school programs for handicapped children (Table 4). Most school districts have programs for coordinating the training of visually impaired children. The Individual Education Plan as mandated by law requires a specific education plan with objectives/goals for each child in special education. There are now fewer children with only visual disabilities and more with multiple handicaps. This makes the training of these children more difficult.

The South Carolina School for the Deaf and Blind in Spartanburg serves 99 visually impaired children from age three to 21 years. The school has 12 visual teachers, two orientation/mobility instructors, and a brailist. The Charles Webb Center in Columbia maintains a preschool program for visually impaired young children. There are also two Master programs for teachers of the blind available at the University of South Carolina, School of Education, Program for Exceptional Children. There is a radio station for the blind requiring a special receiver. This is actually a substation for S. C. Educational Radio. The Library for the Blind and Visually Handicapped will send free material to the blind.

Unfortunately there currently appears a lack of training/ rehabilitation opportunities for the adult blind. Most of the state agencies working with the visually impaired do not take their services into the home. Lack of rehabilitation opportunities makes employment difficult for these adults.

There are a number of national agencies that work closely with the visually impaired

TABLE 4
DATA ON PUBLIC SCHOOL PROGRAMS FOR HANDICAPPED CHILDREN
REPORTED BY CATEGORY OF HANDICAPPING CONDITION
AND PROGRAM MODEL 1990-1991

CATEGORY*	SELF-CONTAINED	RESOURCE ROOM	ITINERANT	OTHER**	TOTAL
MR	7827	4638	470	911	13846
HH	155	302	300	11	768
DEAF	78	9	0.00	7	94
VH	59	87	181	9	336
SH	218	1268	16871	22	18379
EH	2268	2189	530	491	5478
OH	269	257	165	67	758
OHI	88	29	5	14	136
LD	5575	20437	2225	459	28696
D/B	2	0.00	0.00	3	5
MH	131	59	20	15	225
TOTAL	16670	29275	20767	2009	68721

*MR	Mentally Retarded	OH	Orthopedically Handicapped
HH	Hearing Handicapped	OHI	Other Health Impaired
DEAF	Deaf	LD	Learning Disabled
VH	Visually Handicapped	D/B	Deaf/Blind
SH	Speech Handicapped	MH	Multi-Handicapped
EH	Emotionally Handicapped		

**These include public and private separate school facilities, public and private residential facilities, correction facilities and homebound/hospital environments.

PLEASE NOTE: The totals do not include handicapped children aged three to five.

SOURCE: This information was compiled from data reported by local school districts on FORM SDE 29-063-06.

(Figure 2). The National Society to Prevent Blindness is the oldest national voluntary health agency that works to prevent blindness through community service programs, public and professional education and research. The National Federation of the Blind publishes the Braille Monitor. It is the largest organization of the blind in America and its goal is the complete integration of the blind into society. The American Foundation for the Blind has data on blindness and visual impairment in the United States and also a directory of services for blind and visually impaired. The National Association for Visually Handicapped and the American Council of the Blind provide low vision kits, educational material, and large print reading material.

SUMMARY

In less than 40 years the number of people aged 55 and older will constitute almost a third of the United States population. With the median age in South Carolina increasing, the incidence of visual impairment and blindness will rise. Most of the leading causes of blindness in South Carolina are age related. Most of these causes can be prevented or treated resulting in the preservation of functional vision.

By increasing public awareness of blindness prevention opportunities, a significant reduction in blindness in South Carolina can be attained. By eliciting the help of all health professions in South Carolina the incidence of visual impairment/blindness can be reduced. □

FIGURE 2

List of Resources for the Visually Impaired

American Council for the Blind	202-833-1251
American Diabetes Association	212-541-4310
American Foundation for the Blind	212-620-2000
American Printing House for the Blind	502-895-2408
Association for Macular Disease	212-605-3719
Bureau of Blind and Visually Handicapped	202-245-0918
Center for Independent Living	212-674-7580
Council of Citizens with Low Vision	800-733-2258
Mainstream	800-424-8089
National Association for Visually Handicapped	212-889-3141
National Federation for the Blind	301-659-9314
National Federation for the Blind—Special Interest Group	301-659-9314
National Library Service	800-424-8567
National Retinitis Pigmentosa Foundation	800-638-2300
National Society to Prevent Blindness	212-648-8505

REFERENCES

1. Tielsch JM, Sommer A, Katz J, Quigley H, Ezrine S. Socioeconomic status and visual impairment among urban Americans. *Arch Ophthalmol*. 109:637-641, 1991.
2. SC Statistical Abstract. State Data Center. SC Division of Research and Statistical Services, Dennis Building, 1000 Assembly Street, Columbia, SC 29201, 276-277, 1983.
3. Tielsch JM, Sommer A, Witt K, Katz J, Royall RM. Blindness and visual impairment in an American urban population. The Baltimore Eye Survey. *Arch Ophthalmol*. 108: 286-290, 1990
4. Kahn HA, Moorehead HB. Statistics on blindness in the model reporting area 1969-1970. Washington, DC: Office of Biometry and Epidemiology, National Eye Institute: Dept of Health, Education, and Welfare. Publication NIH 73-427, 1973.
5. Roberts J, Lundford J. Monocular visual acuity of persons 4-74 years, United States, 1971-1972. Vital and Health Stat 11. Washington, DC: National Center for Health Statistics; Dept of Health, Education, and Welfare Publication HRA 77-1646, 1977.
6. Leibowitz HM, Kornegor DE, Maunders LR, Wilton RC, et al. The Framingham eye study monograph. *Surv Ophthalmol*. 24(suppl): 335-610, 1980.
7. World Health Organization. Blindness information collected from various sources. *Epidemiol Vital Stat Rep*. 19:437-511, 1966.
8. World Health Organization. Guidelines for programmes for the prevention of blindness. ISBN 9241541415.pp 16, 1979.
9. Macura CA, Davis DR, Brandes DA, Still CN. A report on dementia in South Carolina, 1988-1990. *J SC Med Assoc* 87(11):531-535, 1991.
10. Allen M, Birse E. Stigma and blindness. *J Oph Nursing Tech* 10(4): 147-152, 1991.
11. SC Statistical Abstract. State Data Center. Division of Research and Statistical Services, Dennis Building, 1000 Assembly Street, Columbia, SC 29201. 1990 Census, South Carolina summary population and housing characteristics, 1991.
12. National Society to Prevent Blindness. Vision problems in the United States. 500 East Remington Road, Schaumburg, IL 60173-4557, 1980.
13. Tielsch JM, Sommer A, Katz J, Royall RM, Quigley HA, Javitt J. Racial variations in the prevalence of primary open-angle glaucoma. *JAMA* 266(3): 369-374, 1991.
14. Preferred Practice Pattern American Academy of Ophthalmology. Primary open-angle glaucoma, 1989.
15. Preferred Practice Pattern. American Academy of Ophthalmology. Macular degeneration, 1990.
16. Preferred Practice Pattern, American Academy of Ophthalmology. Continuing ophthalmic video education. Evaluation and treatment of diabetic retinopathy, 1990.
17. Steinkuller, PG. Cataract: The leading cause of blindness and vision loss in Africa. *Social Science Med* 17(22): 1693-1702, 1983.
18. World's major blinding conditions. International Congress of Ophthalmology, National University Hospital. Singapore, 1990.

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Action: Yohimbine blocks presynaptic alpha-2 adrenergic receptors. Its action on peripheral blood vessels resembles that of reserpine, though it is weaker and of short duration. Yohimbine's peripheral autonomic nervous system effect is to increase parasympathetic (cholinergic) and decrease sympathetic (adrenergic) activity. It is to be noted that in male sexual performance, erection is linked to cholinergic activity and to alpha-2 adrenergic blockade which may theoretically result in increased penile inflow, decreased penile outflow or both.

Yohimbine exerts a stimulating action on the mood and may increase anxiety. Such actions have not been adequately studied or related to dosage although they appear to require high doses of the drug. Yohimbine has a mild anti-diuretic action, probably via stimulation of hypothalamic centers and release of posterior pituitary hormone.

Reportedly, Yohimbine exerts no significant influence on cardiac stimulation and other effects mediated by B-adrenergic receptors, its effect on blood pressure, if any, would be to lower it; however no adequate studies are at hand to quantitate this effect in terms of Yohimbine dosage.

Indications: Yocon® is indicated as a sympatholytic and mydriatic. It may have activity as an aphrodisiac.

Contraindications: Renal diseases, and patient's sensitive to the drug. In view of the limited and inadequate information at hand, no precise tabulation can be offered of additional contraindications.

Warning: Generally, this drug is not proposed for use in females and certainly must not be used during pregnancy. Neither is this drug proposed for use in pediatric, geriatric or cardio-renal patients with gastric or duodenal ulcer history. Nor should it be used in conjunction with mood-modifying drugs such as antidepressants, or in psychiatric patients in general.

Adverse Reactions: Yohimbine readily penetrates the (CNS) and produces a complex pattern of responses in lower doses than required to produce peripheral a-adrenergic blockade. These include, anti-diuresis, a general picture of central excitation including elevation of blood pressure and heart rate, increased motor activity, irritability and tremor. Sweating, nausea and vomiting are common after parenteral administration of the drug.^{1,2} Also dizziness, headache, skin flushing reported when used orally.^{1,3}

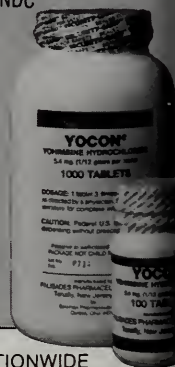
Dosage and Administration: Experimental dosage reported in treatment of erectile impotence.^{1,3,4} 1 tablet (5.4 mg) 3 times a day, to adult males taken orally. Occasional side effects reported with this dosage are nausea, dizziness or nervousness. In the event of side effects dosage to be reduced to 1/2 tablet 3 times a day, followed by gradual increases to 1 tablet 3 times a day. Reported therapy not more than 10 weeks.³

How Supplied: Oral tablets of Yocon® 1/12 gr. 5.4 mg in bottles of 100's NDC 53159-001-01 and 1000's NDC 53159-001-10.

References:

1. A. Morales et al., New England Journal of Medicine: 1221, November 12, 1981.
2. Goodman, Gilman — The Pharmacological basis of Therapeutics 6th ed., p. 176-188. McMillan December Rev. 1/85.
3. Weekly Urological Clinical letter, 27:2, July 4, 1983.
4. A. Morales et al., The Journal of Urology 128: 45-47, 1982.

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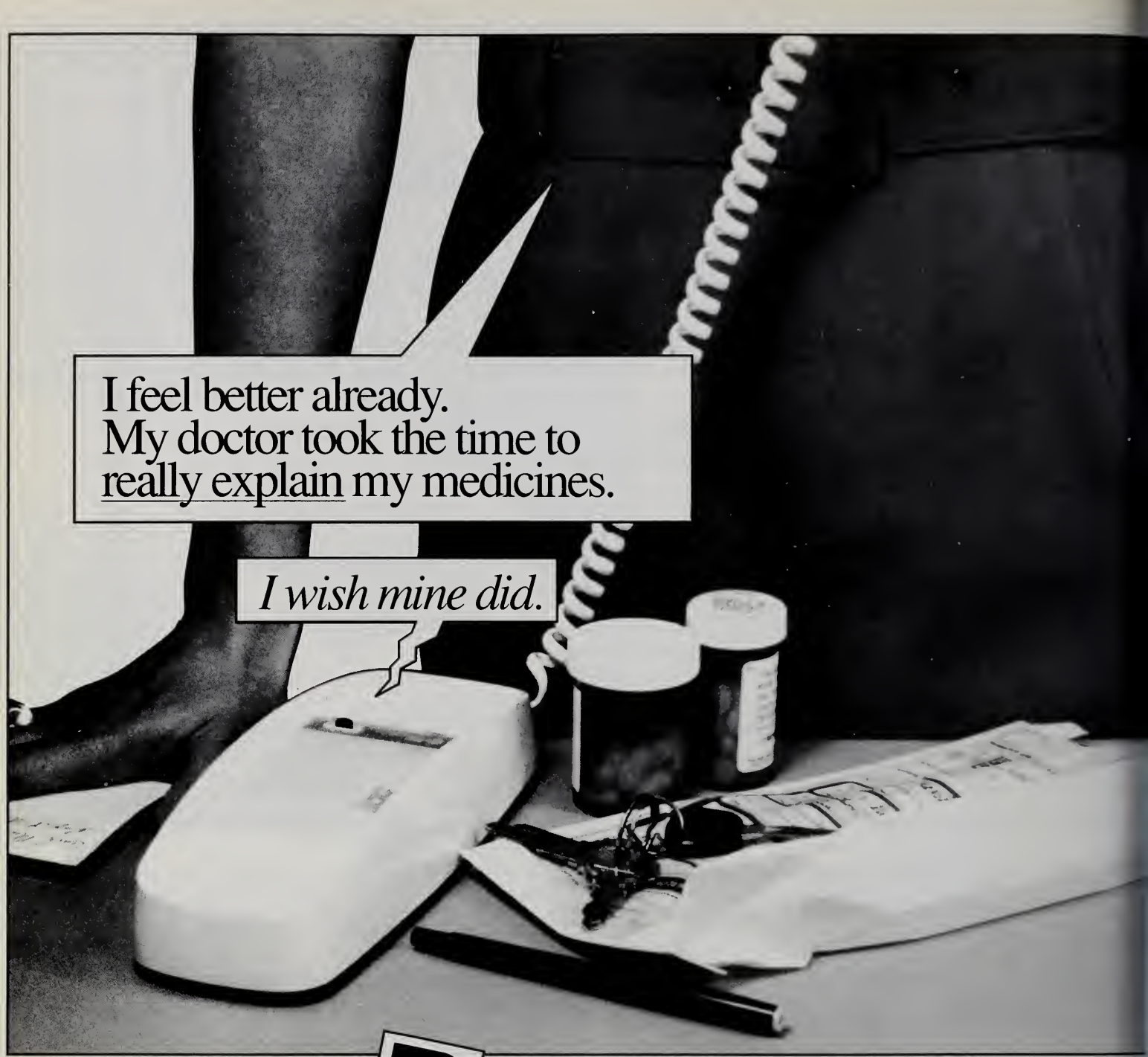
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SCMA NEWSLETTER

A PUBLICATION OF THE SOUTH CAROLINA MEDICAL ASSOCIATION

Joy Drennen, Editor

798-6207, in Columbia

Contributions welcomed

1-800-327-1021, outside Columbia

September 1992

MEDICARE UPDATE

Effective October 1, you may bill for any of the following services now covered by Medicare which you provided since January 1, 1992 and either did not bill or had claims rejected due to Medicare policy, which has now changed. (Refer to last month's newsletter for the revised "New Patient" definition.)

Critical Care: HCFA has revised its policy regarding critical care to clarify that **only the following codes** are bundled into critical care codes 99291 and 99292 and will not be paid when provided on the same day by the same physician: 36000, 36410, 36415, 36600, 71010, 71020, 91055, 92953, 93561, 93562, 94656, 94657, 94760, 94761, 94762.

No other procedure codes are bundled into the critical care codes. Other procedures **will** be paid separately. (EKG interpretations will **not** be paid separately when performed as part of the critical care visit.)

Code 99291 should be used when providing **constant** attention for a total of 30 minutes to one hour on a given day. **If the total duration of critical care is less than 30 minutes, the appropriate E/M code should be used.** Code 99292 should be used to report services provided **constantly** for each 15-30 minutes **beyond** the first hour. The time spent with the individual patient **and** the services rendered **must** be recorded in the patient's record.

Critical care provided during a global period may be paid under the following circumstances: The patient is critically ill and requires the constant attendance of the physician and the critical care is unrelated to the specific anatomic injury or general surgical procedure performed. Modifier 25 for pre-operative must be used and documentation that the care was unrelated must be submitted. Use modifier 24 for post-operative critical care. ICD-9 codes 800.0-959.9 (except 930-939) is acceptable.

Payment for Supplies (Excludes Drugs): Surgical Dressings are not paid separately when provided in the physician's office. However, if the physician furnishes surgical dressings for use at home, the physician may be

reimbursed for these dressings. The following codes will be paid separately when provided in the physician's office: A4565-slings; A4580-cast supplies; A4570-splints; A4590-casting materials, hexelite; A4572-rib belt; L4350-L4380-pneumatic ankle control splint. UNNA boots are considered dressings and **not** payable. Prosthetic/orthotics may be paid separately if provided in the physician's office. They must be used for a **permanent** condition. A4560-pessary is considered a prosthetic and is payable separately. Surgical trays are covered for a limited number of procedures.

Injection and E/M Codes: You can no longer bill code 99211 with an injection. You should bill the appropriate injection code (90782-90788) and the appropriate J code. Code 99211 should not be used to report a visit for the purpose of receiving an injection.

Visit Before Procedure: HCFA has decided to create a modifier to identify visits in which the decision to perform surgery was made on the day of or the day before surgery. Until we have such a modifier, if documentation shows that the decision for surgery was made during a visit, the visit can be paid separately.

By now you should have received your June/July Medicare Advisory. Included in this advisory are updated instructions for the HCFA 1500 form which you **must** begin using by October 1, 1992. You should read this advisory carefully. There is much new information and clarifications of policies. Another advisory will be issued this month with even more clarifications, including more HCFA 1500 instructions for completing items 11, 11d and 33, which you must be using by October 1, 1992. If you have questions, contact Cindy Osborn or Barbara Whitaker at the SCMA. Please let the SCMA know of your questions and concerns regarding RBRVS or the Medicare coding rules. We can provide input for change through the AMA and/or Taylor Cook, MD, Medical Director at BC/BS. In the near future, the SCMA and representatives of all state specialty societies will serve on a Medicare Advisory Committee to continue to improve the Medicare program. □

MEDICAID UPDATE

HCFA 1500 Claim forms: As of September 1, 1992, regardless of date of service, all Medicaid claims must be submitted using the 12/90 version of the HCFA 1500 claim form. Claims filed using any other version of the HCFA 1500 claim form will be returned to the provider. Please refer to the February 25, 1992 Medicaid bulletin for instructions on proper completion of the new form.

Medicaid Reductions: At the time this newsletter went to press, the Finance Commission was forced by the state budget shortfall to make the following reductions as of October 1:

- two prescriptions;
- one hospital admission;
- freeze on CLTC admissions;
- reductions in some physician and other provider rates and implementation of some new patient copays.

Reductions in prescriptions and hospital admissions cannot apply to pregnant women or children in accordance with federal law. Details about these and other reductions will be forthcoming in an HHSFC Bulletin.

Supplemental Code for Immunization Administration: Assessment and administration of childhood immunizations is a routine part of EPSDT visits. Unless oth-

erwise contraindicated, immunizations should be given at the time of the scheduled visit. The code **S9877** may now be used to bill for the administration of recommended childhood vaccines when administered during non-EPSDT visits. The reimbursement is \$20 (80% for nurse practitioner screeners). The code has a frequency limit of three per year. The code cannot be billed in addition to an EPSDT screening visit or any other office visit on the same day. *Refer to the July 16 Finance Commission Bulletin for details.*

New EPSDT Claim Form: There is a new EPSDT 1724 claim form which is to be used statewide effective September 14, 1992. This form was mailed to physicians by the State Health and Human Services Finance Commission (HHSFC) on August 6, 1992.

Effective September 14, the EPSDT standards are revised regarding **Lead Screening and Developmental Assessment.**

For questions, call Sandra McCord or Paula Trulley in Columbia at 253-6121. □

DHEC RECRUITMENT ASSISTANCE PROGRAM

The DHEC Office of Rural Health is soliciting applications for recruitment assistance from primary care physicians physically located in Federally Designated Health Professions Shortage Areas (HPSAs). Approved practices will be able to offer National Health Service Corps (NHSC) incentives to primary care physicians, nurse practitioners, nurse midwives and physician assistants. Through the NHSC Loan Repayment Program, primary care physicians and midlevels can be awarded as much as \$120,000 in exchange for a four-year work obligation in a HPSA. Lesser awards are given for shorter obligations, with the minimum obligation being two years.

The Office of Rural Health offers free technical assistance for local recruitment efforts and serves as a placement service for those professionals inquiring about practice opportunities in SC. *If you would like an application for recruitment assistance or additional information, call Mark Jordan at 1-800-768-3627 statewide or 737-3995 in Columbia, or write Office of Rural Health (DHEC), Robert Mills Complex, Box 101106, Columbia, SC 29211.* □

STOP SMOKING KIT

The American Society of Internal Medicine (ASIM) has updated its "Stop Smoking Campaign Kit for Physicians" to encourage them to create a smoke-free office; counsel smoking patients to quit; and be role models for patients by quitting themselves. Kit materials include tips for establishing a "no smoking" office policy; display materials; a lapel pin; a list of magazines for reception areas that do not contain tobacco advertisements; a fact sheet with health statistics on tobacco use; and resources for educational materials. The kit also contains pre-printed postcards to send to state and national legislators when a constituent dies of a tobacco-related illness.

To order the kit, send a check for \$9 to the ASIM, Literature Order Dept., NR, 2011 Pennsylvania Ave., NW, Suite 800, Washington, DC 20006-1808. ASIM members receive a 20 percent discount. □

CLIA UPDATE

Certification and Compliance: In May, HCFA began mailing a pre-printed survey and 10-digit CLIA registration number (called a "coupon") to physicians who completed the original survey. Physicians who have received the survey first should verify the pre-printed information and make changes if they have added or deleted tests from their testing menu. By now you should have returned the survey to HCFA with the payment for the non-waived registration certificate. This process will complete a physician's initial registration of his or her laboratory.

Later this year, HCFA will send an official application for laboratory certification to physicians who have a non-waived registration certificate. Physicians with these laboratories will be required to complete the *application for certification*. This application will be used to determine whether a physician is performing moderate- or high-complexity testing. Once the physician completes the application, he or she should return it to HCFA. HCFA will then send the physician a bill for his or her compliance determination fee (a bill for the cost of inspection). Physicians will be required to pay the cost in advance.

CLIA Numbers: Since the August newsletter, HCFA has changed their requirements so that physicians will **not** include their CLIA number on their claims. If this policy changes again, Medicare will inform us. HCFA is holding all CLIA numbers in the common working file, so all claims will be processed through "query." If this file does not have a valid CLIA number for the physician, a message will appear on the EOMB stating that the physician must obtain a CLIA number. A CLIA number is a valid number only if the fee has been paid. For now, claims will continue to be paid even without a valid CLIA number; however, this could change any day.

Categories of Testing: HCFA has categorized—specifically by the name of the manufacturer—all testing instruments, kits and assays currently on the market. Please contact the manufacturer of your instruments, kits and assays if you have questions regarding whether or not these are moderate- or high-complexity

Two Recategorizations: Effective July, 1992, the Public Health Service has reclassified only two test systems from their original listing: **Reclassified from high to moderate complexity:** Technicon H1 and H6000 for hemoglobin, hematocrit, white blood count, red blood count, platelet count and white blood cell differential. **Recategorized from moderate to high complexity:** Gen-Probe Pace2 test system for *Neisseria gonorrhea* in

bacteriology. Six tests were reshuffled because of "data entry errors" in their initial classification. Direct Anti-globin tube tests in immunohematology went from high to moderate complexity, while five urine HCG color comparison tests were switched from moderately complex to the waived category.

Complete Complexity List Due: The Public Health Service indicates that on or before the official September start-up of CLIA, a complete complexity list of all estimated 10,000 lab test systems, assays and examinations will be published.

Waived Labs: Coding of Waived Tests: Waived labs must use the following codes (and **not** CPT codes!) for Medicare billing for the eight waived tests:

HCPCS CODE	TEST
Q0095	Urine pregnancy test; visual color comparison tests.
Q0096	Ovulation test; visual color comparison test for human luteinizing hormone.
Q0097	Hemoglobin; by copper sulfate method, non-automated.
Q0098	Glucose, blood; by glucose monitoring devices cleared by the FDA specifically for home use.
82270	Blood, occult; feces. (HCFA erred in calling this code "Q0099" in the May/June Medicare Advisory.)
Q0100	Urinalysis by dip stick or tablet reagent for bilirubins, glucose, hemoglobin, ketone, leukocytes, nitrite, pH, protein, specific gravity, urobilinogen, any number of constituents; non-automated, without microscopy.
Q0101	Microhematocrit; spun.
Q0102	Sedimentation rate, erythrocyte; non-automated.

Resources: As explained in previous SCMA Newsletters and our CLIA Seminars, it is important for physicians to know that CLIA regulations apply to all testing of human specimens performed in your office for the diagnosis, prevention or treatment of disease or assessing of health problems. CLIA also applies whether or not the tests are billed, or covered by Medicare reimbursement. **Following are items which are available from the AMA to assist physicians in obtaining the latest information about CLIA regulations and how they apply to the physician office laboratory. Call 1-800-621-8335 to order.**

❖ **1. Video: CLIA Guidelines for Physicians Office Labs:** This 12-minute video provides information to assist physi-

cians in understanding the range of CLIA regulations as they apply to physician office laboratories. It highlights the new rules, what must be done to comply, discusses certification, CLIA ID numbers, inspections, fees, penalties for non-compliance and other aspects important to physicians who provide lab services for their patients. The cost is \$10 for AMA members, \$30 for nonmembers. Ask for order number OP111392. This tape is also available on loan by calling Pam Mosser at SCMA Headquarters.

❖ **2. Books and Manuals:** *COLA Guide to Quality Assurance* is a comprehensive, easy-to-understand guide that converts a challenging subject – laboratory quality – into a series of straightforward, practical steps. The guide details pertinent topics like implementing guidelines for lab safety, assuring proper specimen collection, and establishing a comprehensive maintenance plan. Developed by the Commission of Office Laboratory Accreditation (COLA), a recognized authority on quality assurance in the office laboratory, the cost is \$90. Ask for OP273491CP.

New from the College of American Pathologists, *Self-Instruction Manual for Today's Physician Office Laboratories* contains instruction test and question/answer sections to improve physician and laboratory staff knowledge of regulatory compliance, quality assurance and other aspects of physician office laboratory management. An optional test for CME credit is included. The cost is \$49.95. Ask for OP 274092CP.

Written by the National Committee for Clinical Laboratory Standards, *Physician's Office Laboratory Guidelines and Procedure Manual* is a two-volume publication

which provides the latest administrative and analytical principles on office laboratory compliance according to CLIA-88 regulations. The procedure manual provides specific information on specimen collection, preventive maintenance, quality control, recordkeeping and test procedure pages. Also included is a comprehensive index relating to published final CLIA-88 regulations. The cost is \$125. Ask for OP 274393CP.

Other Assistance:

- 1. The SCMA's CLIA workshop was cosponsored by SmithKline Beecham Clinical Laboratories. Please call Nelda Warner at 1-800-877-8805 for follow-up questions.
- 2. HCFA: SE office, Atlanta: 404-331-0083. CLIA Hotline: 410-290-5850. (This is the number to call if you have not received your CLIA number and you have submitted the survey (HCFA-109 form).
- 3. COLA Lab Accreditation Program: 301-588-5882.
- 4. DHEC: Department of Certification, Lonnie Pitts, Medical Technologist: 803-734-4530. This is the department which will eventually either inspect your lab or validate inspections by private organizations which are "deemed" as acceptable inspectors.
- 5. The SCMA has copies of the HCFA 109 form, the initial survey you must complete before HCFA will issue you a CLIA number.
- 6. Greenville AHEC has scheduled a *How to Survive a CLIA-99 Inspection* workshop on October 21, 1992 at the Ramada Hotel in Greenville, 8:00 am to 1:00 pm. This is an in-depth, hands on preparatory workshop to help participants prepare for CLIA surveys beginning September 1. For information call 803-455-8299 □

WORKING WITH THE MEDIA

Interested in sharing your experiences with the media? Harrison L. Rogers, Jr., MD, Past President of the AMA, would like to hear from you regarding your experiences, both positive and negative. Dr. Rogers has been selected to participate in the First Amendment Center's Visiting Scholars Program. The program has been designed to address the alienation which exists between the media and some of the institutions which it covers—medicine, business, and religion. The goal of the program is to offer recommendations to promote mutual understanding and improve relationships between the media and these groups.

You may write Dr. Rogers at 2672 Battle Overlook, NW, Atlanta, GA 30327. □

PUBLICATIONS AVAILABLE

"Turning Awareness Into Action: What Your Community Can Do About Drug Use In America" is a publication available from the U.S. Department of Health and Human Services. Included are ideas for projects in various settings, statistics of drug use, and lists of resources and referral sources. The booklet is published in both English and Spanish.

To order call the National Clearinghouse for Alcohol and Drug Information at 1-800-729-6686 and give them publication number ADM #91-1562.

COALITION ON FAMILY VIOLENCE

Concerned physicians are invited to join the National Coalition of Physicians Against Family Violence as one way to register their concern and willingness to help stem the tide of this growing problem.

Upon joining, you will receive a set of guidelines on Child Physical Abuse, Child Sexual Abuse, and Domestic Violence which provide information on diagnosis and treatment of abuse. Guidelines on Elder Abuse will be released this fall.

To join the Coalition, call the AMA at 312-464-5066 or write to the AMA Department of Mental Health, 515 N. State St., Chicago, IL 60610. ☐

HHSFC RESOURCE BOOK

The State Health and Human Services Finance Commission has developed a Citizen's Resource Book to assist South Carolinians in obtaining health and human services throughout the state. The booklet gives a description of various services and the names and phone numbers of agencies providing them. The topics include Assessment and Diagnostic Services, Direct Client Services, Material Assistance, Community Services and Local Agency Contacts.

This is an excellent resource for you to help your patients obtain needed assistance. *If you would like a copy for your office, call Catherine Minick in Columbia at 253-6177, or write to her at HHSFC, PO Box 8206, Columbia, SC 29202-8206.* ☐

PROSTATE CANCER AWARENESS WEEK

Please mark Sept. 27 – Oct. 11 on your calendar as Prostate Cancer Awareness Week. During this time urologists throughout the state will be providing free prostate screening for any interested persons. You can help support this important community service project by informing your patients who may need this service that it is available. Most hospitals and many individual urologists' offices will be set up as screening sites.

To find out specific sites in your area, call your local hospital or Mr. Gene McCarty of Schering Labs (sponsoring company) at 1-800-554-5420 x8917 (voice mail). ☐

AMA FEDERATION ADVISORY COMMITTEE APPOINTMENT

SCMA Executive Vice President William Mahon has been appointed to the AMA Federation Advisory Committee to the AMA Executive Vice President James Todd, MD.

The purpose of the committee is to advise the AMA EVP on issues involving management and relations of the American Medical Association, state medical societies, local medical societies and national specialty societies. The charge of the committee is broad and encompasses all issues of national importance to the Federation.

NATIONAL EYE CARE PROJECT

The American Academy of Ophthalmology has established a "National Eye Care Project" which will allow anyone 65 or older who needs a medical eye examination to have it done at no cost if they have no insurance, or acceptance of their insurance payment as payment in full. These patients can make arrangements for an examination by calling 1-415-561-8520. Also, the SC Commission for the Blind is sponsoring a program for people with diabetes to have screening tests done to promote the early detection and treatment which can significantly decrease visual impairment from diabetes. Your patients wishing to have this test done may call 1-800-922-222 to arrange for an appointment with an ophthalmologist. ☐

DMH GUIDELINES FOR EMERGENCY COMMITMENT

The Department of Mental Health has developed guidelines to assist physicians, hospital personnel, community mental health center staff, alcohol and drug abuse commission staff, probate judges and other interested persons in determining if an individual needs an emergency commitment for treatment of alcohol and/or other drug abuse. These guidelines reflect the clinical considerations that underlie the legal requirements for an involuntary admission on an emergency basis.

If you have not received a copy of the August 21 guidelines or have comments, please write to Nancy Carter in Columbia at 734-7817. ☐

RED RIBBON WEEK
OCTOBER 24 - NOVEMBER 1

Day after day members of the medical community see the disastrous effects of drug and alcohol abuse. This is especially tragic when it affects our youth. Recognizing the need to heighten awareness of this problem, the National Red Ribbon Campaign was developed to present a unified and visible commitment toward the creation of a drug-free America. The campaign is a widespread effort involving medical professionals, law enforcement, the religious community, schools and neighborhoods.

Being a physician puts you on the front line in this war and gives you a unique opportunity to work personally with those who are involved or at risk of being involved in drug and/or alcohol abuse. Please show your support for this important project by wearing and displaying red ribbons in your office. This is a great opportunity to discuss alcohol and drug abuse with your patients. Remember, it's as important to be a part of prevention as it is being a part of intervention and treatment.



FEEDBACK FROM THE FIELD

Beginning this month, we will run monthly surveys to assess members' thoughts on a variety of issues and topics. The results of these surveys will be tabulated and run in a subsequent issue.

In order for the SCMA to adequately represent its members, we need to know what you think and what your concerns and suggestions are. Please help us serve you better. All it takes is an envelope, a stamp and a few minutes of your time. *Please return the survey to: Survey Results, South Carolina Medical Association, P.O. Box 11188, Columbia, SC 29211*

HEALTH CARE REFORM

Should reform occur on a state _____ or national _____ level?

Should individuals be required by law to purchase private insurance with subsidies for low-income people?
YES _____ NO _____

Would you support mandated employer-based insurance? YES _____ NO _____

With regard to payment options, do you support use of the 1993 state employee fee schedule as a base with cost of living increases based on the medical market basket? YES _____ NO _____

Would you support a basic benefit plan for low-income people and a policy with large deductibles and health IRAs for others? YES _____ NO _____

Should there be a limit on the types of supplemental health insurance policies available? YES _____ NO _____

Would you support financial incentives to encourage physicians to enter primary care? YES _____ NO _____

Would you support financial incentives to encourage physicians to practice in rural areas?
YES _____ NO _____

LAPAROSCOPIC-ASSISTED VAGINAL HYSTERECTOMY: A CONTINUING EVOLUTION OF SURGICAL TECHNIQUE

A. BERT PRUITT, M. D.*

ROBERT H. STAFFORD, M. D.

The use of laparoscopic techniques as an adjunct in performing hysterectomies is rapidly becoming the rule rather than the exception. It is as much a consumer driven phenomenon as a medical one, in that patients are demanding the highest technology available. This requires physicians to keep current in new procedural changes brought about by this explosion in technology or risk being considered out of touch. The purpose of this paper is to review the authors' first experiences with laparoscopic-assisted vaginal hysterectomies, performed between July 1981 and May 1992 and to discuss our operative results.

Lomano¹ has suggested three categories of laparoscopic hysterectomy:

1. diagnostic laparoscopy followed by standard vaginal hysterectomy.
2. laparoscopic-assisted vaginal hysterectomy (LAVH).
3. true laparoscopic hysterectomy.

The first category allows the surgeon to visualize the pelvic anatomy and avoid unsuspected problems such as endometriosis, pelvic adhesions, previous uterine suspension, etc. The third category is the most technically difficult and mandates the uterine vessels be ligated laparoscopically before completing the operation vaginally. The second category, laparoscopic-assisted vaginal hysterectomy (LAVH), includes those cases between diagnostic laparoscopy and true laparoscopic hysterectomy and may involve varying degrees of operative laparoscopy prior to the operating being completed vaginally.

MATERIALS AND METHODS

Sixty patients, varying in age from 26 to 73 years (mean 43) underwent laparoscopic-assisted vaginal hysterectomy in one of three community hospitals for numerous benign indications (see Table 1). Eleven patients had undergone previous surgery (see Table 2). Multiple procedures were performed in conjunction with LAVH (see Table 4). The operative time averaged one hour and 20 minutes, varying from one hour to two hours and 50 minutes. The average postoperative hospital stay was 2.1 days (Range 1-3 days). Complications (see Table 3) were relatively minor except for two postoperative hemorrhages. The first occurred several hours after surgery, requiring exploratory laparotomy with ligation of the left ovarian artery. The second occurred on the sixth postoperative day and required transvaginal I&D of a pelvic hematoma. Two patients initially scheduled for LAVH required laparotomy due to inability to deliver the uterus vaginally. Both were grossly obese with greater than 16-week size uteri.

Our technique as it evolved utilizes a Verres needle introduced infra-umbilically for insufflation, a 10-11mm trocar placed in an infraumbilical location for the laparoscope with attached video camera, a 12mm trocar placed suprapublically to allow use of the endoscopic linear stapler and one or more 5mm trocars placed in the left and right paramedian positions usually just above the pubic hair line. It was often helpful to use both trocars although it was not necessary to have more than the left paramedian trocar in most cases. The CO₂ laser, electrocautery, endoscopic scissors and the Endo GIA (US Surg.

*Address correspondence to Dr. Pruitt at 200 Rutledge Avenue, Charleston, SC 29403.

TABLE 1
INDICATIONS FOR SURGERY*

Leiomyomata Uteri	35
Mucinous Cystadenoma of Ovary	2
Endometriosis	6
Adenomyosis	16
Pelvic Pain (Chronic PID)	6
Recurrent Dysplasia	3
Pelvic Relaxation	7
Adenomatous Hyperplasia of Endometrium	1

*Some patients had more than one indication for surgery.

TABLE 2
PATIENTS WITH PREVIOUS PELVIC SURGERY*

C-Section	5
Ovarian Cystectomy	2
Endometrial Ablation	1
Bilateral Salpingoplasty	1
Multiple Myomectomy	1
MMK	1

*Excluding Laparoscopy, BTL, and D & C

Corp. Norwich, Conn.) laparoscopic stapler were all used, though rarely all in the same case, and expertise in each of these modalities is helpful.

Adhesions, previous uterine suspensions and other abnormalities are lysed to restore the pelvic anatomy to as normal as possible, thereby avoiding injury to vital structures particularly the ureters. The round ligaments are elevated and divided either by endoscopic staplers or by coagulation and division by the CO₂ laser or endoscopic scissors. The tubo-ovarian pedicles or infundibulo-pelvic ligaments are then divided by the endoscopic stapler or by coagulation with division by laser or scissors. The bladder is then separated from the anterior uterine wall. At this point attention is turned to the vaginal portion of

TABLE 3
COMPLICATIONS

Urinary Tract Infection	7
Transfusion	1
Pelvic Hematoma	1
Post-Operative Hemorrhage	1
Post-Operative Cuff Cellulitis	3
Perineal Cellulitis	1

TABLE 4
PROCEDURES PERFORMED WITH LAVH

Salpingo-oophorectomy (uni- or bilateral)	32
Endometriosis (vaporization or excision)	3
Lysis of Adhesions	13
Appendectomy	1
A/P Repair	11
Repair of Ventral Hernia	2
Biopsy of Perineum	2
Needle Retropubic Urethropexy	1
Excision Lesion of Vulva	1

the procedure. The vaginal mucosa is divided from the cervix and the bladder pillars are clamped, divided and ligated. The cul-de-sac is entered posteriorly and the uterosacral ligaments, cardinal ligaments and uterine vessels are divided and ligated in the customary manner. The uterus is then delivered fundus first, or morsalated as may be necessary in large fibroid uteri. The posterior vaginal cuff is then reefed for hemostasis and uterosacral ligaments are plicated in the midline picking up the anterior bladder peritoneum to close the cul-de-sac. Figure of eight sutures are used to close the lateral portions of the vaginal cuff.

Attention is returned to the laparoscopic portion and the abdomen is redistended and irrigated. Any blood found is removed by irrigation and all pedicles carefully inspected. If bleeding is found, this is addressed by coagulation with either bipolar or unipolar current. The pneumoperitoneum is evacuated and instruments are then removed. Skin incisions

are closed with 4-0 vicryl and the sites are infiltrated with 0.5 percent marcaine with epinephrine. A Foley catheter is left in place for approximately 12 hours. We use prophylactic antibiotics routinely.

Patients are discharged on the first or second postoperative day and most resume activities within one to two weeks. Compared to traditional abdominal or vaginal hysterectomy, patients require less pain medication and appear to ambulate faster. Some institutions are experimenting with laparoscopic-assisted vaginal hysterectomy as same day surgery and early reports appear encouraging.

DISCUSSION

Dr. Nicholas Senn,² in his presidential address to the Chicago Medical Society in 1895, stated "every great operation in surgery has a period of evolution of varying duration. Each marked advance in medicine and surgery is preceded by attempts which lead to the elucidation of old ideas, or the conception of new ones. All great discoveries are overshadowed by the labors of a host of earnest and progressive workers, which ultimately crowned the efforts of a favored few. Nearly all of the improvements in medicine and surgery which have characterized the present progressive age, are only a repetition of the work of our professional ancestors. Many a so-called modern operation is only a recent, and not always an improved, edition of the operative technique as devised and described by one of the old masters. These remarks apply with special force to vaginal hysterectomy. This operation, so recently developed to its present state of perfection, was planned and performed by men who have long since departed, but whose names will always be intimately associated with the interesting history and gradual development of this operation."

In September 1813, the first reported case in America of a vaginal hysterectomy was performed in Charleston, South Carolina, according to a letter from Dr. Shecut

addressed to Samuel Bard, President of the College of Physicians and Surgeons of the University of New York.³ This was performed by Dr. Joseph Glover after consultation with Doctors Ramsey, Baron, Sr., Denny and Doughty.

Over the years, surgeons such as Schauta and Adler have helped improve the techniques of the vaginal hysterectomy. Paul Strassman, Professor of OB-GYN at the University of Berlin, did much to popularize the operation and improve its technique. The great innovative ideas of Dr. Kurt Semm^{4,6} of Kiel, Germany and others have made the laparoscope an integral tool for the surgeon and, in turn, decreased morbidity and mortality for the patient.

In 1989 Reich, Decaprio and McGlynn⁷ reported the first laparoscopic hysterectomy. C. Y. Liu,⁸ J. Lomano⁶ and others have added their improvements and, today, this procedure is replacing a number of hysterectomies that would previously have been accomplished through an abdominal laparotomy.

CONCLUSIONS

Although laparoscopic-assisted vaginal hysterectomy may not be the best technique for all patients, it certainly represents a viable alternative because of less morbidity, postoperative pain and lost time from family and employment. Ovaries may be removed safely and easily in older patients, which sometimes is difficult during a strictly vaginal hysterectomy and this is no small benefit, considering dismal success in treating ovarian cancer. Most of all, the shortened hospital stay makes a significant reduction in cost. As new techniques are developed and improvements are made in instrumentation, surgical expertise will no doubt continue to evolve. □

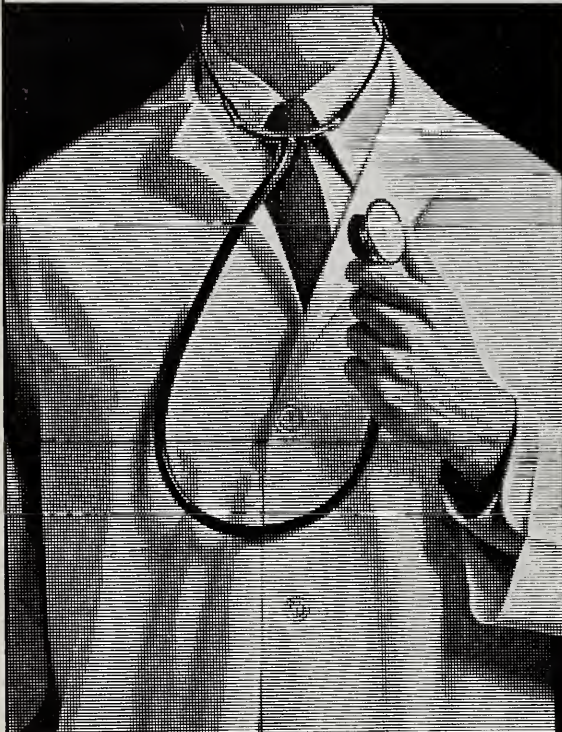
ACKNOWLEDGMENT

The authors would like to express their appreciation to the operating room staffs of Bon Secours-St. Francis Hospital, Roper Hospital and Baker Hospital for their able assistance.

REFERENCES

1. Lomano Jack M: Laparoscopic hysterectomy. A changing standard of care. Surgery Alert 1992; 8:63-64.
2. Kennedy JW and Campbell AD: Vaginal hysterectomy. Philadelphia, PA, F. A. Davis Company, 1944, 5.
3. Ibid, Pages 19-23.
4. Semm K: Tissue-puncher and loop-legation. New ideas for surgical therapeutic pelviscopy (laparoscopy), endoscopic intra-abdominal surgery. Endoscopy 1978; 10:119-124.
5. Semm K: Advances in pelviscopic surgery. Curr Prob Obstet Gynol. 1982:5:7.
6. Semm K, Mettler L: Technical progress in pelvic surgery via operative laparoscopy. American Journal Obstet Gynol. 1980; 138:171-7.
7. Reich, H, De Caprio J, McGlynn F: Laparoscopic hysterectomy. Journal Gynecol Surg. 1989, 5:213.
8. Liu, CY: Laparoscopic hysterectomy in a community hospital, report of 215 cases. Personal communications.

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SHOULD SOUTH CAROLINA PHYSICIANS INCORPORATE THEIR PRACTICES?

DAVID W. BALL, J. D., LL. M.*

Until the early 1980s, there were significant tax advantages for physicians to incorporate their professional practices and a great many did so. Since that time many tax benefits have been equalized between corporations, proprietorships and other forms of business entities. Additionally, South Carolina adopted a comprehensive revision to its corporate laws that substantially modified the rules for incorporating professional practices. Physicians must reconsider well-established propositions in light of these corporate and tax law changes.

CORPORATE LAW CONSIDERATIONS

Prior to the South Carolina Business Corporations Act of 1988 (the "Act"), all professional associations ("P.A.s"), including those for physicians, were formed by filing articles of association with the office of the county clerk of court where the P.A.'s principal office was located. Regular corporations, on the other hand, filed articles of incorporation with the South Carolina Secretary of State. The Act requires all new P.A.s to file articles with the Secretary of State and pay the same filing fee as for regular corporations.

Further, the Act requires that all existing P.A.s requalify under the Act by amending and restating their existing articles and filing the amended and restated articles together with certified copies of their original articles and all amendments thereto with the South Carolina Secretary of State. The deadline for requalification was December 31, 1990. Physician P.A.s that did not requalify by December 31, 1990 are, by the terms of the Act, no longer permitted to engage in the professional practice of medicine. While the Act does not provide for any express sanctions or enforcement mechanisms to ensure compli-

ance with this requirement, several potential problems, such as loss of P.A. status for tax and liability purposes, are apparent. P.A.s that have not requalified under the Act should do so immediately, if they wish to retain P.A. status. The Secretary of State has indicated informally that it will continue to file amended and restated articles.

The Act makes it clear that P.A.s are now generally treated as South Carolina corporations, except for certain special rules applicable only to P.A.s:

1. Generally, a P.A. may be formed solely for the purpose of rendering professional services, including services ancillary to them, within a single profession. While in certain situations a P.A. may provide more than one professional service (e.g., engineers and architects may be permitted to practice together in one P.A.), they are not permitted to engage in other business activities (however, they can invest funds in real estate, mortgages, securities or any other type of investment).
2. There are strict limitations on P.A. names.
 - a. The name must contain the words "professional corporation," "professional association," "service corporation," or "chartered," or the abbreviation "P.C.," "PC," "P.A." or "PA."
 - b. For physician P.A.s, the name cannot state or imply that it is formed for a purpose other than practicing medicine. The name must conform with the applicable licensing authority (i.e., South Carolina Board of Medical Examiners) rules.
3. Subject to certain limited exceptions, shares can be transferred only to persons qualified to practice the profession engaged in by the P.A. The share certificates must include a

*Address correspondence to Mr. Ball at 1306 South Church Street, P. O. Box 1923, Greenville, SC 29602.

notice prescribed by statute regarding the transferability restriction. Only licensed physicians can be shareholders for a South Carolina P.A. medical practice.

4. For physician P.A.s, at least one-half (1/2) of the directors and all the officers except the secretary and treasurer must be licensed physicians.
5. A shareholder in a P.A. is liable for his own malpractice to the same extent as if he were a sole proprietor. However, he is not liable for other professionals' malpractice, unless he is at fault in appointing, supervising or cooperating with them. In other states, similar language has been held to insulate qualified shareholders in a P.A. against personal liability for malpractice committed by other professionals in the P.A. *Grayson vs. Jones*, 710 P2d 76 (Nev. 1985) and *Birt vs. St. Mary Mercy Hospital of Gary, Inc.*, 175 Ind. App. 32, 370 NE2d 379 (1979). However, in *First Bank & Trust Company vs. Zago-ria*, 250 Ga 844, 302 SE2d 674 (1983), the Georgia Supreme Court held, as to the shareholder of a P.A. that engages in the legal profession, the shareholder will be liable not only for his own professional misdeeds, but also for those of the other shareholders of his firm, notwithstanding Georgia corporate law to the contrary. It is important to note that the Georgia case may apply only to law practice. The court viewed the case as one calling for the exercise of the court's authority to regulate law practice rather than interpretation of the Georgia P.A. statute. While the South Carolina courts have yet to consider the question, for physicians, it is likely they would follow the clear statutory language and the *Grayson* and *Birt* cases.

Under the Act, there continue to be advantages for forming a P.A.:

1. Limited liability. As mentioned previously, the South Carolina statute is clear, and when faced with the question, the South Carolina courts will likely follow the statute and the law of other states

upholding limited liability. Further, the Georgia case mentioned above, which applied to attorneys, did not eliminate the limited liability rule with regard to non-professional activities of the P.A. Professional shareholders will generally not be liable for the P.A.'s business debts.

2. Entry of new professional owners. A P.A. provides a relatively simple mechanism for accepting new professional owners into the practice. Since ownership is represented by stock, as in other corporations, the P.A. can issue new shares or the other owners can sell shares to the new owner. Ownership transfer issues are generally more difficult in other business entities and may require preparation of additional documents.
3. Legal foundation. P.A.s can rely upon a well-developed body of statutory and case law regarding corporate matters that define the legal structure of the P.A. and its rights and responsibilities. The law applicable to other business entities is not as well developed. For example, in drafting a medical practice partnership agreement the drafter must address restrictions on the transfer of the partnership interest to non-professionals, whereas in a P.A., this issue is resolved by statute.
4. Practice management. The case can be made that operating in the corporate form may cause a P.A. to manage its business more effectively. This likely will occur if the P.A. holds regular board meetings and keeps minutes.
5. Perpetual existence. The P.A. has continued existence, unlike a partnership.

The corporate law disadvantages to P.A.s include the legal expense and filing fees of incorporating, the ongoing compliance and record keeping required for the separate entity and the need to observe corporate formalities by keeping meeting minutes, issuing shares and so forth (although these corporate formalities can be greatly reduced under special new rules adopted in South Carolina).

When the practice consists of two or more

physicians, the liability consideration is sufficient reason to recommend forming a P.A. The ease of ownership transfer, well established legal foundation, effective management and perpetual existence also weigh in favor of forming a P.A. For all of these reasons, it remains advisable to form P.A.s for group medical practices. The liability reason is not applicable to sole practitioner physicians because they remain liable for their own malpractice. If the sole practitioner physician has no intention to expand his practice and transfer any ownership interest, there probably are not sufficient corporate law reasons to form a P.A. However, there are tax reasons that still weigh in favor of doing so. These are discussed below.

TAX LAW CONSIDERATIONS

Prior to the Tax Equity and Fiscal Responsibility Act of 1982 ("TEFRA"), there were strong tax advantages for forming P.A.s for medical practices, primarily due to more favorable qualified plan treatment afforded P.A.s. While TEFRA eliminated many differences in tax treatment between self employed physicians and P.A.s, some differences continue to exist.

Tax advantages to forming a P.A. include:

1. Self-employed physicians can deduct only 25 percent of the cost of health insurance whereas the cost is fully deductible by a P.A. Further, a written medical reimbursement plan can be adopted by a P.A. to reimburse employees for medical expenses not covered by insurance. The reimbursement amounts are deductible by the P.A., but are not includable in employees' income.
2. P.A.s can deduct premium costs on group term life insurance coverage of up to \$50,000.00 for employees. The premium cost is not includable in the employees' income. This deduction is not available to non-corporate business entities.
3. Disability insurance premiums are similarly deductible by P.A.s and not includable in employees' income. Again, this

advantage is not available to proprietorships or partnerships.

4. A P.A. can generally deduct 70 percent of the dividends it receives on its investments in other domestic corporations. This deduction is not available to non-corporate entities.
5. Significantly more restrictive rules continue to exist in the qualified plan area as to non-corporate entities, including prohibitions on plan loans to owner-employees, limitations on income averaging on plan distributions to owner-employees, and elimination of the deduction for plan contributions used to purchase life, accident, health or other insurance for owner-employee participants.

The tax disadvantages to forming a P.A. include the additional tax compliance costs for a separate entity, the need for ongoing tax planning and the potential "tax traps" inherent in operating in the P.A. form (e.g., unreasonable compensation, personal holding company income and the accumulated earnings tax). By and large, the "tax trap" concerns as to P.A.s have not materialized.

Health insurance, medical reimbursement and disability insurance costs can exceed \$6,000.00 per year per professional employee. By forming a P.A. and deducting these expenses at the corporate level a savings in excess of \$2,000.00 per year per professional employee can be achieved.

In summary, there remain sufficient tax advantages to recommend forming a P.A. to both group and solo professional practices. Of course, any such decision should be made only after consulting with experienced legal counsel, conducting a careful and thorough examination of the particular practice and accepting the need to respect and treat the P.A. as a separate legal entity. □

David W. Ball is a member of Dobson & Dobson, Attorneys at Law, P. A., in its Greenville, SC office. He practices primarily tax, health care, and corporate law.

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PROPER PRESCRIBING PREVENTS POTENTIAL PROBLEMS*

B. M. LAWTON, JR., M. D.**

MARTIN H. ZWERLING, M. D.

"Good morning, doctor. I'm an Investigator calling from the State Board of Medical Examiners. A complaint has been filed against you. I'm calling to make an appointment to visit your office. We need to copy certain medical records and ask you some questions...."

If you have ever received the above phone call or have nightmares about such a call, your autonomic nervous system should kick in with panic and fear by the time you hear the words, "a complaint has been filed."

The misuse of medications is usually the initiating cause for most of these investigations. However, recognizing the patient who misuses medication or the patient seeking controlled drugs for purposes of intoxication or resale to others, constitutes a frequent clinical problem for which medical school doesn't prepare you.

Here's how to recognize some common drug-seeking behaviors:

- When the patient tries to become the doctor by controlling the situation. The patient specifies the illness and recommends the treatment.
- Emotional tactics such as intimidation, guilt or sympathy inappropriate to the situation.
- Out-of-town ploy is a very common tactic which often includes an explanation such as "I'm visiting relatives and I've run out of my medication."
- Telephone scams are acted out by drug abusers posing as one of the doctor's regular

patients. They generally call after hours seeking medication. The doctor is at a disadvantage, not having access to the alleged patient's medical records.

- Addiction confessions are sometimes an effective way for an abuser to get drugs to "tide him over" since admission into recovery programs may not be instantly available. Federal law prohibits prescribing addictive drugs to an addictive person except in approved treatment centers.

The authors commend the leadership role of the AMA Informal Steering Committee on Prescription Drug Abuse, and acknowledge and appreciate use of their resources.

In the last 12 months, 12 of your fellow physicians in South Carolina have had their medical licenses restricted or suspended because of improper prescribing habits.

Two of the most common reasons are dispensing of controlled substances for no legitimate medical purpose or dispensing excessive amounts of controlled substances not reasonably related to the proper management of the patient's illness.

Improper prescribing habits can be categorized using the four "Ds:"

- Dated
- Duped
- Dishonest
- Disabled

DATED

Dated or uninformed physicians have not kept abreast of new developments in pharmacology and drug therapy. These dated physicians may prescribe excessive amounts of drugs and often for too long a time period. Also, they often are not aware of new or revised indications for older drugs.

*Both authors are members of the Medical Disciplinary Committee of the South Carolina Board of Medical Examiners.

**Address correspondence to Dr. Lawton at P. O. Box 366, Cameron, SC 29030.

PROPER PRESCRIBING

Abbreviated Schedule of Controlled Substances: Federal Classification *

Schedule I	Schedule II	Schedule III	Schedule IV	Schedule V
<p>NARCOTIC ANALGESICS</p> <p>Acetylmethadol (LAAM)</p> <p>Heroin</p> <p>STIMULANTS</p> <p>Amphetamine variants</p> <p>HALLUCINOGENS</p> <p>Analogues of phencyclidine</p> <p>Ibogaine</p> <p>Lysergic acid-diethylamide (LSD)</p> <p>Marijuana, Hashish</p> <p>Mescaline</p> <p>Peyote</p> <p>Psilocybin, Psilosyn</p> <p>Tetrahydro-cannabinols (except dronabinol)</p> <p>DEPRESSANTS</p> <p>Methaqualone</p>	<p>NARCOTIC ANALGESICS</p> <p>Alphaprodine</p> <p>Anileridine</p> <p>Codeine</p> <p>Dihydrocodeine</p> <p>Ethylmorphine</p> <p>Etorphine (M99)</p> <p>Fentanyl</p> <p>Hydrocodone</p> <p>Hydromorphone</p> <p>Levorphanol</p> <p>Meperidine (Pethidine)</p> <p>Methadone</p> <p>Morphine</p> <p>Opium</p> <p>Oxycodone</p> <p>Oxymorphone</p> <p>Phenazocine</p> <p>DEPRESSANTS</p> <p>Amobarbital</p> <p>Pentobarbital</p> <p>Secobarbital</p> <p>Sufentanyl</p> <p>STIMULANTS</p> <p>Amphetamine</p> <p>Cocaine</p> <p>Methamphetamine</p> <p>Methylphenidate</p> <p>Phenmetrazine</p> <p>HALLUCINOGENS</p> <p>Phencyclidine</p> <p>ANTIEMETICS</p> <p>Dronabinol</p>	<p>NARCOTIC ANALGESICS</p> <p>Acetaminophen + codeine</p> <p>APC & Codeine</p> <p>Aspirin + codeine</p> <p>Nalorphine</p> <p>Paregoric</p> <p>DEPRESSANTS</p> <p>Any compound containing an unscheduled drug and:</p> <p>Amobarbital</p> <p>Secobarbital</p> <p>Pentobarbital</p> <p>Glutethimide</p> <p>Methprylon</p> <p>STIMULANTS</p> <p>Benzphetamine</p> <p>Clortermine</p> <p>Phendimetrazine</p>	<p>DEPRESSANTS</p> <p>Alprazolam</p> <p>Barbital</p> <p>Bromazepam</p> <p>Camazepam</p> <p>Chloral betaine</p> <p>Chloral hydrate</p> <p>Chlordiazepoxide</p> <p>Clonazepam</p> <p>Clorazepate</p> <p>Diazepam</p> <p>Ethchlorvynol</p> <p>Ethinamate</p> <p>Fenfluramine</p> <p>Flurazepam</p> <p>Halazepam</p> <p>Meprobamate</p> <p>Methobarbital</p> <p>Oxazepam</p> <p>Paraldehyde</p> <p>Pentazocine</p> <p>Phenobarbital</p> <p>Propoxyphene</p> <p>Prazepam</p> <p>Triazolam</p> <p>STIMULANTS</p> <p>Diethylpropion</p> <p>Mazindol</p> <p>Phentermine</p> <p>Pemoline</p>	<p>Mixtures containing limited quantities of narcotic drugs, with non-narcotic active medicinal ingredients.</p> <p>Less abuse potential than Schedule IV.</p> <p>Generally for antitussive and anti-diarrheal purposes. May be distributed without a prescription order.</p>

* This table is based on federal regulations. State regulations may result in different classifications.

DUPED

Duped or deceived physicians are often fooled by skillful drug abusers who seek prescriptions for inappropriate use. Even experienced physicians may have difficulty recognizing and reacting appropriately to drug-seeking behavior patients. All doctors are potential targets regardless of their specialty, location or years of experience.

DISHONEST

The dishonest physician is guilty of willful and conscious misprescribing for drug abuse purposes, profit or other personal gain. Fortunately, dishonest physicians represent a small percentage of practicing physicians. Drug addicts nickname these doctors "Dr. Feelgood," or "script doctors."

DISABLED

Disabled or impaired physicians may be diverting medications for their own use. In

doing so they are jeopardizing their medical license. Rehabilitation programs are available and they are often license-saving and life-saving measures before law enforcement or regulatory action becomes necessary.

The practicing physician must be on the lookout for drug-seeking behavior. Here are some valuable tips:

1. Avoid prescribing by telephone.
2. Be judicious in prescribing controlled drugs to first time transient patients.
3. Know your patient before prescribing.
4. Suspect anyone who specifically requests a narcotic and especially anyone who requests a specific narcotic.
5. Never allow any patient to do your job for you.
6. Document. Document. Document all controlled drug prescriptions.

In South Carolina, as well as in almost every other state, violations of controlled substance laws *lead* the list of disciplinary act-

ions against physicians.

Physicians must develop skills in distinguishing drug use in the context of practice and the deceptive behavior of the drug abuser. State and federal law impose precise and strict requirements when issuing Controlled Substances Registration Certifications. When not adhered to, the infractions are not treated lightly. □

ACKNOWLEDGMENT

The authors wish to thank Stephen S. Seeling, Executive Director, State Board of Medical Examiners of South Carolina, for originally suggesting this article and for providing appropriate materials.

REFERENCES

1. From Prescribing Controlled Drugs, Copyright 1986, American Medical Association.
2. S. C. State Board of Medical Examiners.



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Editorials

WILLIAM OSLER AND MEDICAL SOCIETIES

Yes, join both the city and the county society, and never miss a meeting. Keep your mouth shut too, for a few years, particularly in discussions.

William Osler

We celebrate this year the centenary of William Osler's *The Principles and Practices of Medicine*, the most famous publishing event in the history of American medicine.¹ The best-known physician of his generation, Osler continues to inspire; indeed, one author recently suggested: "To the extent that we live up to the Osler hero-myth, our profession will prosper."² What was so special about

William Osler? What was the fuss about? Of what we now call "the Oslerian tradition," what is truth and what is myth?

Although these questions deserve intricate answers, I'm not sure that they really matter—at least for our daily lives. What matters is not the real William Osler—a complicated human being who, like the rest of us, had his foibles and his problems—but rather the



Figure 1. William Osler working on *The Principles and Practice of Medicine* (courtesy of the Osler Library, McGill University).

ideal. The medical profession—then and now—needed an idealized William Osler for the same reason that it earlier needed an idealized Hippocrates.³ Both men stood—and stand—as symbols that medicine is more than a way to make a living. Both men came to symbolize the union of scientific competence and humanistic compassion. Both men cared deeply about medicine as a *profession*.

Since time immemorial, laypersons have questioned whether doctors are truly professionals who put the public interest above their own. In truth, an accurate definition of “professionalism” in medicine or for that matter in any other occupation can be as elusive as the snark. However, at least one definition of “profession” seems beyond dispute: “the body of persons in a particular calling or occupation.” It follows that standing for professionalism is a corporate responsibility. Each generation in Hippocrates’ time, in Osler’s time, in our time—must take its stand for professionalism; the logical place to do so is within professional organizations.

William Osler was a skilled clinician; a popular teacher; a charming personality; a prolific writer. He excelled in nearly everything he undertook. Yet he said that he had no really exceptional talents and there were those who took him at his word, who attributed his enormous success not to unusual ability but rather to hard work, organization, and a clear sense of priority. In view of Osler’s extreme goal-directedness, it may come as something of a surprise that Osler was extremely active in medical societies. Why would anyone who placed such a high premium on tangible accomplishment bother to attend the countless meetings, meetings, and meetings that are the stuff of organized medicine? There is a story that once Osler was about to leave for a medical meeting when he turned to a younger colleague and said: “I’m going to the medical society—aren’t you coming?” The colleague replied that he was not going because he considered the medical society meetings to be a waste of his time. Osler replied: “Do you think I

don’t?” He slammed the door and left for the meeting. In 1889, Osler, recently-arrived in Baltimore, was invited to give the annual address to the Medical and Chirurgical Faculty of Maryland. He could easily have given a straightforward scientific paper, but chose instead to enter the fray of medical politics. His topic was a hot potato: whether to regulate medicine through licensure.⁴ Osler urged:

We cannot . . . escape from the important fact that in the eyes of the law we all stand equal, and if we wish legislation for the protection of the public, we have got to ask for it together, not singly. I know that this is gall and wormwood to man—at the bitterness of it the gorge rises; but it is a question which has to be met fairly and squarely.

The public interest came first, and the medical society was the appropriate forum to take a stand. In 1903, Osler lectured “On the Educational Value of the Medical Society.”⁵ He argued that a first function of medical societies is promotion of unity and friendship:

The first, and in some respects the most important, function is . . . to lay a foundation for that unity and friendship which is essential to the dignity and usefulness of the profession. Unity and friendship! How we all long for them, but how difficult to attain! Strife seems rather to be the very life of the practitioner, whose warfare is incessant against disease and against ignorance and prejudice, and, sad to have to admit, he too often lets his angry passions rise against his professional brother.

A second function was to provide what we would now call continuing medical education:

The well-conducted medical society should represent a clearing house, in which every physician of the district would receive his intellectual rating. . . . We doctors do not “take stock” often enough, and are very apt to carry on our shelves stale, out-of-date goods. The society helps to keep a man “up to the

times,” and enables him to refurnish his mental shop with the latest wares.

Finally, Osler urged physicians to participate in all three layers of organized medicine:

It is not in the local society only that a man can get encouragement in his day's work and a betterment of mind and methods. Every practitioner should feel a pride in belonging to his state society, and should attend the meetings whenever possible, and gradually learn to know his colleagues, and here let me direct your attention to an important movement on the part of the American Medical Association, which has for its object the organization of the profession throughout the entire country.

He recognized that medical societies are the best way to keep up with both the scientific content and also the socioeconomic fabric of medicine.

In 1905, Osler left the United States to become Regius Professor of Medicine at Oxford. His farewell address to the medical profession of the United States, entitled “Unity, Peace and Concord,”⁶ provided another strong endorsement of organized medicine. Osler was quite optimistic about medicine's future:

Linked together by the strong bonds of community of interests, the profession of medicine forms a remarkable world-wide unit in the progressive evolution of which there is a fuller hope for humanity than in any other direction.

However, he again acknowledged that physicians were prone to petty, destructive quarrels. For these, he again saw organized medicine as the best remedy:

The national and special societies, and particularly the American Medical Association, have brought men together and

have taught them to know each other and to appreciate the good points which at home may have been overlooked. [Yet] it is in the smaller towns and country districts that the conditions are most favourable for mutual misunderstandings. Only those of us who have been brought up in such surroundings can appreciate how hard it is for physicians to keep on good terms with each other.

In his parting words, Osler spoke of his deep “conviction of the blessings that come from unity, peace, and concord.” He emphasized the *community* of medicine.

The fierce, public disputes among physicians which characterized medicine at the turn of the 20th century have, fortunately, become uncommon. However, we can anticipate that if times get tighter and corporate structures become more evident, such acrid rivalries will re-surface. To the old truism that nothing remains constant except the winds of change, we might add the truism that adherence to principle is always the best anchor. Osler saw principle in organized medicine. His enthusiasm for medical societies would seem to be an essential part of the legacy we still salute as “the Oslerian tradition.”

—CSB

REFERENCES

1. Golden RL: Osler's legacy: the centennial of *The Principles and Practice of Medicine*. *Ann Intern Med* 116: 255-260, 1992.
2. Wheeler HB: Shattuck lecture—healing and heroism. *N Engl J Med* 322: 1540-1548, 1990.
3. Lloyd GER: The transformations of ancient medicine. *Bull Hist Med* 66: 114-132, 1992.
4. Osler W: License to practice. *Maryland Med J* 21: 61-67, 1989.
5. Osler W: On the educational value of the medical society. *Boston Med & Surg J* 148: 275-279, 1903.
6. Osler W: Unity, peace, and concord. *JAMA* 45: 705-710, 1905.

On the Cover:

ROBERT B. TAFT, M.D., (1899-1951) AND HIS "RADIUM HOUND"

Our cover this month shows a composite of newspaper clippings describing the adventures of Robert B. Taft, M.D., and his "Radium Hound."

Dr. Taft was born in Charleston in 1899, attended the College of Charleston, earned his M.D. degree from the Medical College of the State of South Carolina in 1923, and served on the faculty of his Alma Mater from 1936 to 1951. He was active in the American Roentgen Ray Society and was honored several times by that group. It is for his hobby, however, that Dr. Taft achieved his widest notoriety. Shortly after the development of the Geiger-Muller counter by two German physicists, Taft modified the invention to suit his own interest in the locating of lost radium. In the pre-OSHA days of early radiation treatment, this very expensive (\$6,000 for 50 milligrams) and very dangerous element was often inadvertently bundled up in soiled bandages and discarded. This was the point at which Dr. Taft and his "Radium Hound" were called.

His 1938 book, *Radium, Lost and Found*, recounts some adventures in searching for 107 lost specimens. The places of recovery were "...many and strange. Besides sewer

lines, incinerators and dump heaps, lost radium has been recovered from the cuff of a doctor's trousers and the stomach of a pig which had been fed on hospital garbage." The book was originally intended for private distribution among friends, but was so well received that a second edition was published in 1946.

In 1932, Dr. Taft X-rayed the 2,500 year old Egyptian mummy at the Charleston Museum. From his work, it was decided that the body was probably that of a female and not a male as had been thought.

In 1949, Dr. Taft was appointed a consultant for the Institute of Nuclear Studies at Oak Ridge.

Dr. Taft was "...more than a radiologist and a physician, he was a genial companion and a loyal friend. His boundless energy, his keen sense of humor, his genial personality drew others to him."

At his death on April 16, 1951, the physicians of Charleston and his colleagues throughout the state lost one of their finest friends.

Betty Newsom
The Waring Historical Library



Auxiliary Page

HEALTH PROMOTION 1992 - 93

Your 27 county auxiliaries are enthusiastically supportive of the programs of the SCMA that strive to improve the health and quality of life for the people of our state. Our goal is to promote health education, motivate volunteerism in activities that meet health needs and support health-related charitable endeavors.

During 1992-93, emphasis from the American Medical Association and Auxiliary will be on issues targeting the problem of domestic violence. In addition to encouraging the development of programs to educate the public, support victims, and provide physicians with community resources, state and county auxiliaries will be urged to work with medical societies and associations to encourage physicians and auxiliaries to join the National Coalition of Physicians Against Family Violence. The AMA Auxiliary continues to address adolescent health, as well as women's health, environmental health, the importance of childhood immunizations, physician well-being, and healthy living for all Americans.

The SCMA Auxiliary is making a difference in our state through involvement in several ongoing health projects. We have received very positive feedback from our "Teen Direct Line" cards. These wallet-sized cards contain state and national hotline numbers that teens can contact for assistance in times of crisis. Our goal is to place 50,000 cards in the hands of our youth this year. Through involvement with the "Grow With Books" project in conjunction with the South Carolina State Library, we will work hand in hand to promote literacy and health from birth. In the 1992 National Red Ribbon Campaign (October 24-November 1), we will work to present a unified and visible commitment toward the creation of a drug-free America. The Health Education Van continues to be our most visible health promotion tool as it covers the state providing teachers and students with exhibit-oriented training in the areas of substance abuse education, reproductive health, nutrition, pregnancy prevention, and prevention of sexually transmitted diseases.

The United States Surgeon General, Dr. Antonio Novello, in addressing the AMA Auxiliary Convention in June, challenged all auxiliaries "to think, to care, and to act." It is through our actions that we can make a positive impact on the health and well-being of our communities. The positive impact that these activities have on our state will enhance the image of the physicians and the medical profession as well.

Mrs. Jay Markowitz (Alice)
SCMAA Health Promotion Chairman 1992-93

Classifieds

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President's Page

WHAT HAS THE SCMA DONE FOR THE "DOC IN THE TRENCHES"?

In the doctors' lounges of our various hospitals, we are often asked, "Why join the SCMA?" "What has it ever done for us?" Interesting how those who enjoy the free ride tend to be the most vocal. Following are some facts.

- ❖ The work of the Risk Management Committee and the JUA has resulted in some of the lowest malpractice premiums in the country. Ask your colleagues in North Carolina and Georgia.

- ❖ Lobbying efforts at the State House successfully defeated (a) an increase in licensure fee as well as a provider tax to fund Medicaid, (b) physical therapists' ability to treat patients without referral by a physician, (c) independent practice of physicians' assistants, (d) mandatory insurance coverage of chiropractors and psychologists, (e) triplicate prescriptions, (f) mandatory assignment; obviously this is an ongoing task.

- ❖ The Doctor of the Day Program provides an opportunity for members to work at the State House during the session and meet the various legislators.

- ❖ The Physicians Advocacy and Assistance Committee allows those with substance abuse problems to continue practicing while getting help for their problem.

- ❖ The SCMA serves as an informational resource with all the new regulations, including OSHA, CLIA, COBRA, and the new disability act. The SCMA staff is always available at the other end of the telephone to help with any of your questions.

- ❖ Health and disability insurance is provided for members, their families, and their office staff at competitive prices.

- ❖ The SCMA will intervene on behalf of any individual physicians who are having reimbursement problems with state or federal agencies.

- ❖ A media response plan has been developed to combat negative coverage of physicians and organized medicine.

- ❖ *The Journal*, the SCMA newsletter, legislative updates, CME calendar and special mailings keep members informed on all types of issues. Workshops are offered, including OSHA and CLIA; educational materials are available. Over 25 organized and active SCMA committees provide a forum for physician input and involvement, and again I would like to invite any member who would like to serve on any of these committees to please call me or Ms. Ann DePalma at 1-800-327-1021.

With the ever increasing changes in the practice of medicine, it is imperative that we all become involved and stick together. The house of medicine needs to work together to maintain professionalism. I would like to ask every member to try to recruit one new member during this year. We solicit your input and appreciate your support.

A handwritten signature in cursive script that reads "Bartolo Barone, M.D.".

Bartolo M. Barone, M.D.
President

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Charles S. Bryan, M.D.
SCMA, P.O. Box 11188
Columbia, S.C. 29211

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SPECIAL ISSUE: SOUTH CAROLINA AHEC: IMPROVING RURAL HEALTH THROUGH MEDICAL EDUCATION

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COOPETITION IN RURAL HEALTH EDUCATION: THE SOUTH CAROLINA AHEC MODEL*

G. DEAN CLEGHORN, ED. D.**

INTRODUCTION

How does this nation, which is devoted to free enterprise, control health care costs and preserve the existing standards of quality health outcomes? This complex question has placed health care in turmoil. We are confronting a critical period, during which new ways will be developed to control health care costs. No longer is there debate about whether this will happen; the debate is about how it will happen. Recent prediction of future developments depicts competing scenarios ranging from incremental change with no new health policy to sweeping changes resulting in universal health insurance.¹ As movement into the future increases its pace, we find little hope for small incremental change. At best, increments of change will be large, rapid, and numerous.²

This issue of *The Journal* provides the reader a perspective on new views of health care and medical education already occurring in South Carolina. The new views strongly adhere to the strength of the competitive economic principles that undergird this nation. At the same time they combine competition with a tough-minded view of cooperation for the good of our people. Combining these ideas creates a shift to a new way of thinking about how to improve quality health outcomes, to increase productivity, and to decrease costs **simultaneously**. New views

incorporate several critical elements: needed changes in education and practice due to the exploding information age, the re-emergence of populism and increased demands for basic health care for everyone, the increased value being placed on morality in professional decision-making, the continuous quality improvement movement, and the increasing emphasis on outcomes in health care and health education.

The olympic games provide a useful analogy. The games are governed by international agreement to reach the highest possible human athletic achievement and, in doing so, represent the highest ideals of worldwide unity. Many diverse competitive and cooperative relationships are designed and implemented to field our U. S. olympic teams. Institutions, athletes, and whole communities work together while also competing with each other to develop the best possible teams for the international games. Familiar to Americans as well as to citizens of other nations is the pride and depth of emotion we feel when we witness the award ceremonies honoring the best of the world's most deserving young people who have achieved their dreams. The pride reflects strong nationalism, but there is also a grander sense of being a citizen of the world. The achievements of the world-class athletes over the years have been truly phenomenal. The games, themselves, have served to advance standards of performance and to extend the limits of human potential. Like the olympics, health care has created new standards for individual health and has extended the limits human life. Through the South Carolina Area Health Education Consortium (S. C. AHEC), several major hospitals, the two medical schools, and

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**Address correspondence to Dr. Cleghorn at the S. C. AHEC, Medical University of South Carolina, 171 Ashley Avenue, Charleston, SC 29425.

numerous private practices compete every day for the best health care professionals in South Carolina. Whether in upstate South Carolina, the midlands, or the low country, the same organizations with hundreds of physicians and other health care providers work toward a common goal of improved health for all the citizens of this state.

DUALITY TO MUTUALITY

Ideas about cooperation and competition appear daily in conversations, the media, and publications for health and health education.³ Each is often advocated at the expense of the other. The view is common that there is a duality between cooperation and competition in health care and health education. For example, health care competitors have been characterized as enemies, even to the extreme that warfare is used as a model for the relationship between hospitals.⁴ In these cases cooperation with the enemy is only advised when it is useful in overcoming the enemy. Further, academic-practice (or town-gown) competition frequently precludes cooperation among physicians.⁵ Educating medical students in the ambulatory setting represents a huge change for most medical schools and their academic departments, where in-patient services have long been the predominant setting for education. Often, medical schools do not have sufficient clinics to absorb much, if any, of the educational load for core clerkship training. So what is a school to do? Creating new clinics for educational purposes is one alternative, but it can increase town-gown competition at the expense of cooperation. Another problem today is urban-rural competition for resources; intensive efforts are under way to shift more public funding of health care to rural areas.

These examples point out the need for another way of looking at cooperation and competition. Socrates developed the notion of the dialectic—that is, the pursuit of truth and knowledge proceeds through cyclical stages of growth. A thesis is developed for which there is an antithesis; the dynamic interaction

of the thesis and antithesis produces a synthesis of the two, which becomes a new thesis.

How can we synthesize “working together for a common goal” (cooperation) with “vying against each other for the same goal” (competition)? Both concepts involve a relationship between two or more entities and both are directed toward goal achievement. A synthesis requires us to shift our thinking to a relationship that seems illogical – “vying together” – and it necessitates a new word we will call “coopetition.” To illustrate this, let’s revisit the olympic games example. How do two runners engage in cooperation and competition (coopetition) at the same time? They vie against each other to reach the goal first—and only one can do so. Yet, by vying against each other, both are seeking to set new standards of performance—to set a new record. Further, the rules of the competition are designed to optimize each participant’s performance. The runners cooperate by following the rules; they may even agree to work together in training and preparing for the olympic event. The synthesis is achieved in that both competitive goals and cooperative goals are consistent with a single commitment—in this case to set a new record for running speed.

The definition of our new concept, coopetition, includes several critical features. Coopetition is first and foremost based on a moral commitment, such as, “basic medical care should be available to everyone.” Second, a cooperative moral judgement exists beyond the level of cooperative or competitive goals. The most difficult moral dilemmas are those that exist without a broader framework. This is perhaps the most difficult aspect of coopetition—to broaden the view of our responsibilities and aspirations. For example, seeking new funds for maintaining the status quo is a reasonable survival goal for inpatient education, but it may not be so reasonable when it is viewed in the context of broader goals for educating the physicians of tomorrow. Third, the success of coopetition is determined exclusively by measures of total quality.

Berwick⁶ succinctly clarifies total quality for health care in that it can be attained only through meaningful patient outcomes, clinically and experientially for the patient. This is a fundamental tenet. Finally, cooperative goals are best achieved through individual empowerment which, in health care, is evident in the growing trend toward more equity of incentives for services among various specialties and disciplines. These features are integrated in the following definition of cooptation: **the pursuit of morally-based, superordinate goals which raise human performance outcomes through individual empowerment within competitive and cooperative relationships.**

Cooperation is more than simply cooperating and competing at the same time. The synthesis of the concepts adds an entirely new dimension. It is the outcome of the cooperative **relationship** that counts, not merely the respective outcomes for each member. Furthermore, it demands attention to defining superordinate goals which the cooperative and/or competitive sub-relationships are designed to achieve.

COOPERATION AND RURAL HEALTH EDUCATION

How does the academic institution meet societal demands for education that better prepares students for the realities of the "real world"?⁷ For medical education, this question is, "how do we prepare students for practice as it actually exists today and in the future." Those of us in the ivory tower like to think of ourselves as being on the cutting edge; all too often, however, we find ourselves trying to catch-up with how medicine is being practiced right now; and we are even further behind in preparing students for the future.⁸ Dr. Tom Johnson put it quite clearly: "Medicine is not always a team player. We don't cooperate in solving problems unless they are problems where we have or perceive principal control. While we have successfully advanced biomedical science and become purveyors of sophisticated technology, our

complex society requires more from us, and we need to look at where we are providing solutions, and perhaps more importantly, where we may be part of the problem."⁹

While there are no easy solutions to this problem, many efforts are under way in South Carolina to find new solutions, especially for rural health and an improved balance between specialty and generalist health care and education.

We have implemented cooperation in South Carolina through realignment of S. C. AHEC priorities to promote rural initiatives to improve the distribution of health professionals and increase access to care for rural citizens.¹⁰ These priorities have been stimulated by themes taking shape in today's debates over health care reform—an emphasis on creating changes in and by the local community,¹¹ of community-oriented primary care,¹² of developing integrated health care systems¹³ and others. Rural health education and recruitment initiatives through cooperative efforts of the two medical schools and the teaching hospitals in the state,¹⁴ the S.C. AHEC, the Department of Health and Environmental Control (DHEC), the South Carolina Primary Care Association,¹⁵ and many local communities are the substance of this special issue of *The Journal*. Among the initiatives is a satellite education program sponsored by the Family Medicine Residency Programs. Competitive residency programs, local practitioners, community health centers, community leaders, and interdisciplinary task forces have worked together to pursue the lofty goal of improving rural health in South Carolina. Three rural satellite education centers are now in operation and others will be operational within months; the South Carolina Rural Physician Program now supports over 70 physicians practicing in rural areas, and efforts continue to increase in support of generalist education for the future of South Carolina.

Issues of competition and cooperation surfaced from the beginning of these projects—and they still persist. The issues include: rela-

tionships with local physicians; relationships between nurses and physicians; relationships with neighboring health care facilities—health department, mental health department, community health center, adjacent county hospital, to name several; relationships with MUSC and USC; relationships to the host hospitals; relationships to “sister” projects; relationships with diverse community constituencies; and relationships to funding sources, including the state and federal government, teaching hospitals, foundations and others. The strength to weather the many storms regarding these relationships has been a collective commitment to one overarching goal to improve rural health. At times different partners have exemplified willingness to “give in” for the good of the cause, rather than create debilitating strife. While storms continue, the seemingly chaotic winds flow together well enough to maintain strong momentum toward the goal of improved health for all South Carolinians.

We have learned some important lessons. Our losses at times have set the stage for our greatest gains. Like the olympic athletes, health care providers and systems can achieve new heights of performance by synthesizing cooperation and competition. We all share the common goal to improve health.

While problems we face in improving rural health are embedded in the broader problems facing health care today,¹⁶ this issue of *The Journal* portrays some very successful innovations to address these problems. Activities range from recruitment of physicians into rural practice and recruitment of secondary students for health and medical careers to new efforts in primary care research as well as to innovations at all levels of medical education—preclinical through residency training. The merits of these efforts speak for

themselves, and they position South Carolina well to cope with the health care and educational changes of the decade ahead as predicted by Dr. O’Neal Humphries’ editorial in this issue. □

REFERENCES

1. McMahon, JA: The health care system in the year 2000: three scenarios. *Academic Medicine*: 67, No. 1, January: 1-7, 1992.
2. Toffler, A: *PowerShift*. New York: Bantam, 1990.
3. Zuckerman, HS and D’Aunno, TA: Hospital alliances: cooperative strategy in a competitive environment *Health Care Management Review* 15, no.2: 21-30, 1990.
4. MacStravic, RS: Warfare or Partnership: which way for health care? *Health Care Management Review*: 15, no.1: 37-45, 1990.
5. Schreiber, M: Academic and private practice: competition, concession, and conciliation. *American Journal of Radiology* May: 1027-1028, 1987.
6. Berwick, DM, Godfrey, AB, Roessner, J: *Curing Health Care*. San Francisco: Jossey-Bass Publishers, 1991.
7. Colloton, JW: Academic medicine’s changing covenant with society. *Academic Medicine* Feb: 55-60, 1988.
8. Davidson, RJ: Viewpoint: academic medical centers—it is time for a declaration of values. *Health Care Management Review*: 15, no.2: 81-85, 1990.
9. Johnson, T: Overview of the symposium. *Academic Medicine*, Vol. 65, No. 12, Svi, December Supplement, 1990.
10. Mission and Goals: South Carolina Area Health Education Consortium (S.C. AHEC): Medical University of South Carolina, 1990.
11. Osborne, D: *Laboratories of Democracy*. Boston: Harvard Business School Press, 1988.
12. Nutting, P, ed: *Community-Oriented Primary Care: From Principle to Practice*. Albuquerque: University of New Mexico Press, 1990.
13. Berwick, DM: Seeking systemness. The future of integrated healthcare systems. *Healthcare Forum*: March/April: 22-28, 1992.
14. S. C. AHEC Governance Document, 1989.
15. DHEC, PCA, AHEC cooperative agreement to provide educational loan forgiveness program for rural medical practice. MUSC, 1989.
16. Kaufman, A: Rurally based education: confronting social forces underlying ill health. *Academic Medicine* 65, no. 12: 18-21, 1990.

THE IMPORTANCE OF RESEARCH IN AMBULATORY GENERALIST PRACTICES*

BARRY L. HAINER, M. D.**

CATHERINE MUSHAM, PH. D.

A CASE FOR GENERALIST, AMBULATORY CARE RESEARCH

For the past few decades almost all clinical medical research has been based upon tertiary care at academic medical centers. Generally, patients having specific disease characteristics have been studied, resulting in the use of highly specialized patient samples. There is no doubt that this approach has produced significant advances in medical technology and clinical treatments. Nonetheless, what is known about the limitations of research conducted in teaching centers underscores the need for research in ambulatory settings – i.e. centers where generalist physicians such as family physicians, general internists and general pediatricians practice.

There are two drawbacks to tertiary care based research. First, the tertiary care setting does not lend itself to the study of practical health services issues, specifically questions concerning the type of clinical care needed to produce desired outcomes for broad patient populations. Heightened public concern with where health care dollars are being spent suggests study of this and related issues will remain a priority for years to come.

As mentioned previously, the patient samples available at tertiary medical centers impose another limitation. Clinical observations are typically based on referral patients who represent only a small segment of patients with a given disease. Research findings based on such patient samples may not be generalized to less selected populations. A

related problem is the tendency to study patients who have been referred to tertiary care centers because of unusually severe or obscure conditions. These patients are not representative of the types of patient populations found in primary care settings. For example, the incidence of cancer found in patients with thyroid nodules, cancer of the gallbladder in patients with gallstones and cancer of the bladder in adult males with hematuria is considerably smaller in primary care settings than the incidence reported from referral centers.¹

The apparent inconsistency in research findings from referral centers as opposed to those from primary care settings can be traced to the prevalence of the disease in the populations studied. This point is illustrated by one of the authors' experience with a diagnostic test, promoted in the early 1980s as a new, rapid means of detecting gonorrhea from cervical samples. According to a journal report, the test worked well with relatively few false reactions.² In collaboration with several colleagues at the Medical University of South Carolina, the value of the test among primary care patients was evaluated at our family medicine center.³ Unexpectedly, there were enough inaccurate results (false positives and negatives) in this setting when compared with the gold standard of gonococcal culture to render this new rapid test of little value.

As an explanation of this development Figure 1 compares an idealized patient population with characteristics of our family medicine center and those of the sexually transmitted disease clinic where the initial study was conducted. At the sexually transmitted disease clinic patients were highly

*From the Department of Family Medicine, Medical University of South Carolina, Charleston.

**Address correspondence to Dr. Hainer at the Department of Family Medicine, Medical University of South Carolina, 171 Ashley Avenue, Charleston, SC 29425.

FIGURE 1

Comparison of predictive value of a test for gonorrhea in two different patient populations

Sexually Transmitted Disease Clinic		Pts. who do not have GC	
		Pts. Who Have GC	
⊕test	45	a b	5
⊖test	0	c d	50
		45	55 = 100pts
Prevalence = 45%			
1. Sensitivity of test = 100% (a/a+c) 2. Specificity of test = 90% (d/b+d) 3. Predictive value of ⊕test result =			
$\frac{\text{true positive}}{\text{true positives} + \text{false positives}} = \frac{a}{a + b} = \frac{45}{50} = 90\%$			
GC = Gonorrhea			

Family Medicine Center		Pts. who do not have GC	
		Pts. who have GC	
⊕test	4	a b	10
⊖test	0	c d	86
		4	96 = 100pts
Prevalence = 4%			
1. Sensitivity of test = 100% (a/a+c) 2. Specificity of test = 90% (d/b+d) 3. Predictive value of ⊕test result =			
$\frac{\text{true positive}}{\text{true positives} + \text{false positives}} = \frac{a}{a + b} = \frac{4}{14} = 28\%$			

self-selected (for the likelihood of their having gonorrhea), and in fact, there was a high prevalence (45 percent) of gonorrhea among them. This study was done largely on asymptomatic patients screened as part of their prenatal care, a group of patients with a low prevalence (four percent) of gonorrhea. In this simplified example the specificity (ability of the test to exclude those without disease) and sensitivity (ability of the test to detect those with disease) of the test are made the same in both settings. However, the difference in prevalence of the disease in each setting markedly affects the predictive value of the test result. The predictive value of a positive test result is the likelihood that a patient with a positive test actually has the condition being tested for (proportion of true positives compared with the sum of true and false positives).

In the example, the clinical utility of the test (as reflected by its positive predictive value) is markedly different in the two settings studied because of the difference in prevalence of the disease in each. This illustrates how research in highly selected populations sometimes produces results which are not neces-

sarily applicable to generalist (unselected patient) settings. Research which is based on patient samples which are more representative of the population at large have greater internal validity (i.e., the research measures what it purports to measure) as well as external validity (i.e., application to other populations). In addition, ambulatory sites are ideal environments for study of the public health care issues such as cost of health outcomes and services.

While individual generalist research has yielded valuable clinical insights,^{4,6} we strongly favor collaborative research efforts among generalists. The trend toward collaborative research was initiated in the early 70s with the advent of regional and international research networks. Such groups arose from awareness of the need to address the issues and problems facing the generalist physician and those of the undifferentiated patient seen by generalists. Most notable among these networks in the United States are the Ambulatory Sentinel Practice Network (ASPN)^{7,8} and the Pediatric Research in Office Setting Network (PROS).⁹

Over the past two decades, the benefits of

collaborative research in generalist fields of medicine are evident even though the numbers of such studies have been small. For example, useful information about issues of importance to generalists have been obtained from studies of spontaneous abortions,¹⁰ screening for iron deficiency anemia,¹¹ and the effectiveness of visual screening in preschool age children.¹² Networks promote a productive dialogue between network members and promote a team approach and participatory spirit to the completion of the more mundane aspects of research such as data collection or analysis. In addition, collaborative research in networks allows accumulation of greater numbers of research subjects in a shorter period of time. More such studies in generalist settings are needed.

A review of existing networks shows that some tend to study patient populations at training sites (some of which are university based), some rely exclusively on patient populations from offices of physicians in full-time practice, and some draw their samples from both types of populations. Whether in academic or practice settings, generalist ambulatory populations are worthy of study.¹³ Because such populations, regardless of loca-

tion, reflect more accurately the clinical experience of primary care settings, they avoid the biases inherent in highly selected patient populations.

NEW FAMILY PRACTICE RESEARCH CONSORTIUM IN SOUTH CAROLINA

The South Carolina Family Practice Research Consortium was launched in the fall of 1991 with the support of the South Carolina Area Health Education Consortium. It is composed of representatives from the seven residency sites for training family physicians in South Carolina (Table 1). The consortium's first project is a study of family medicine residents' physical and psychological health. Presently, we are collaborating in a partnership of the Medical University of South Carolina, the University of South Carolina School of Medicine, and five community training sites. Community partners bring to this collaboration their clinical input, practice advice and additional patients as subjects; the university partners provide expertise in research design, analysis and administrative support in addition to providing their primary care patients as subjects.¹⁴ The members intend to expand the network to include inter-

TABLE 1
SOUTH CAROLINA FAMILY PRACTICE RESEARCH
CONSORTIUM MEMBERS

Anderson Family Practice, Anderson Memorial Hospital

Department of Family Medicine, Medical University of South Carolina
(Charleston)

Richland Memorial Family Practice Residency, University of South
Carolina School of Medicine (Columbia)

McLeod Family Medicine, McLeod Regional Medical Center (Florence)

Greenville Family Practice, Greenville Memorial Hospital

Montgomery Center for Family Practice, Self Memorial Hospital (Greenwood)

Spartanburg Family Practice Residency, Spartanburg Regional Medical
Center

ested practicing generalist physicians in this state and provide research in areas of clinical interest to generalists with the next few projects.

GENERALIST RESEARCH AGENDA

While there is no unanimity of opinion regarding research direction in generalist care, there are some common elements. These are best summarized in the research agenda of the Agency for Health Care Policy and Research (AHCPR), the newest agency in the U. S. Public Health Service.¹⁵

The list below represents a broad review of relevant topics for research in generalist care:

1. Study of the natural history of common problems in unselected patient populations.
2. Assessment of the effectiveness of preventive, diagnostic and curative care.
3. Studies of non-medical factors which govern change in health status.
4. Identification of strategies for providing high quality primary care in underserved areas.
5. Studies relating to utilization of services and compliance with physician and public health recommendations;
6. Studies of the process by which new practice patterns or technology are disseminated to physicians.
7. Measurement of functional status and outcomes of care.
8. Research on educational strategies that are effective for training generalists.

The establishment of AHCPR represents a step in the right direction by the federal government in creating support for research in generalist care. However, AHCPR's budget is minuscule compared to that of the National Institute of Health which funds research at the tertiary level of medical care.

With a desired increase in numbers of practicing generalist physicians, need will increase for funding of research in health care provided by generalists. South Carolina has an enviable record for supporting training in

generalist fields. It can also take the leadership in supporting research in the natural history of disease, treatment outcomes, utilization of preventive services and ways to increase access to care for underserved populations. This investment will allow our state to base its health policies upon research in the settings where generalist health services are delivered. □

REFERENCES

1. Froom J, Froom P: Adjusting for selection biases in referral populations, *J Fam Pract*, 24(1): 80-82, 1987.
2. Spagna VA, Prior RB, Perkins RL: Rapid presumptive diagnosis of gonococcal cervicitis by the limulus lysate assay, *Am J Obstet Gynecol*, 137:595-599, 1980.
3. Hainer BL, Danylchuk P, Cooper J, Weart CW: Limulus lysate assay in detection of gonorrhea in women from a low incidence population. *Am J Obstet Gynecol*, 144: 67-71, 1983.
4. Pickles WN: Research in general practice. *Br Med J* 2:469-471, 1948.
5. Fry J: Profiles of Disease. Baltimore: Williams & Wilkins; 1966.
6. Hames C: Socioeconomic status and morbidity and mortality in hypertensive blacks. *Cardiovasc Clin*, 21(3), 179-94, 1991.
7. Iverson DC, Calonge BN, Miller RS, Niebauer LJ, Reed FM: The development and management of a primary care research network, 1978-87. *Fam Med*, 20(3): 177-180, 1988.
8. Frey, JJ: Claiming the community: The ambulatory sentinel practice network, *Fam Med*, 20(3): 163-164, 1988.
9. Haggerty RJ: Collaborative research in pediatric practice. *Peds*, 89(5): 974-975, 1992.
10. Ambulatory sentinel practice network. Spontaneous abortion in primary care: a report from ASPN. *J Am Bd Fam Pract*, 1988; 1:15-23.
11. Pantell R, Mellema, J, and The California Collaborative Office Based Research Group. Screening for iron deficiency: results and risk factors. *Am J Dis Child*, 1987; 141:388.
12. Wasserman, RC, Croft CA, Brotherton SE: Preschool vision screening in pediatric practice: a study from the Pediatric Research in Office Settings (PROS) Network. *Peds*, 89(5): 834-838, 1992.
13. Holloway RI: Networks and net worth: practice-based data collection in family medicine, *J Fam Pract*, 33(2): 137-139, 1991.
14. Morris, BAP: Community and university — partners in research, *Fam Pract Res J*, 12(2): 123-130, 1992.
15. Nutting PA: The primary care research program of AHCPR, *J Fam Pract*, 32(1): 27-28, 1991.

SOUTH CAROLINA AHEC'S STUDENT DEVELOPMENT AND RECRUITMENT PROGRAM: A MODEL FOR INCREASING MINORITY PARTICIPATION IN THE HEALTH PROFESSION

SABRA C. SLAUGHTER, PH. D.*

EARL B. HIGGINS, ED. D.

EUGENE W. LILLIEWOOD, M. D.

Health care and access to care are severely jeopardized for minority citizens of South Carolina, in part because of an inadequate supply of minority physicians. While approximately 30 percent of the state's population is composed of African-Americans, only three percent of the physicians practicing in the state are African-Americans.¹ The ratio of African-American physicians to African-American citizens is 1:6386 as compared to a ratio of 1:472 of white physicians to white inhabitants in the state. If more health care providers were available to rural, often African-American populations of the state, care would be improved. However, today the predominately rural African-American citizens suffer most on virtually all health indicators. The 1988 *Health Status Report*² detailed the disparities in health indicators between black and white citizens in the state. In short, life expectancy for black people is about six years less than that of white people in South Carolina. When one considers that enrollment in the health professional schools in South Carolina is only about seven percent minority, the prospects of changing health care for minorities is a tremendous challenge.

The purpose of this article is to describe efforts that are currently under way within South Carolina Area Health Education Consortium (S. C. AHEC) and related institutions

to increase the number of minority health providers and to report some of the preliminary results of such efforts.

HISTORICAL OVERVIEW

Since its inception in 1972, the S. C. AHEC has been involved in increasing minority participation in the health professions in South Carolina. The initial focus on the recruitment and development of medical students was broadened during the 1980s to include the health professions in general. In addition, it was determined that efforts to identify minority students for health careers should occur at the high school level rather than during college. In 1983, AHEC sponsored a pilot, four-week, residential program for 30 minority high school students in the Charleston metropolitan area. The program was developed and coordinated by the Medical University of South Carolina's (MUSC) Office of Minority Affairs and called the Summer Academic Enrichment Program. Since the Summer Academic Enrichment Program proved successful in the Charleston metropolitan area, it was determined that similar programs should be conducted in other regions of the state. By 1990, a statewide staff, including Minority Coordinators in the seven AHEC sites and a director of the newly formed Office of Minority Programs for South Carolina AHEC had been employed. The programs now consist of three components: pre-professional health clubs, summer enrichment programs, and a student identification and tracking system.

*Address correspondence to Dr. Slaughter at the S. C. AHEC, Medical University of South Carolina, 171 Ashley Avenue, Charleston, SC 29425. Dr. Higgins was from MUSC (see editor's note, p. 474). Dr. Lilliewood, an obstetrician, is in practice in Beaufort.

CURRENT EFFORTS

The academic year is spent working with students in pre-professional health clubs. These clubs are made possible through partnerships between seven AHECs and various participating public schools. Currently, there are clubs in 30 middle schools and 70 high schools throughout South Carolina. The average annual membership of clubs statewide is 1,400 students. Students in these groups learn about various health occupations by researching career literature, exploring computer software programs, viewing video presentations, and through meeting and talking with health professionals in clinical and classroom settings. In addition, club participants visit colleges and schools that offer training in health occupations, and they are informed about the application process for admissions. Moreover, careful individualized academic counseling is provided for each participant, and all of them also participate in workshops to enhance academic performance.

The second major set of activities involves a select group of pre-professional students in summer enrichment programs. Students are selected on a competitive basis, using criteria such as grade point average and performance in pre-professional health clubs. The structure and content of summer programs varies from one AHEC to another. In one summer program, for example, students live on college campuses for two weeks while they receive formal instruction in biology, mathematics, computer science, and communications. Another summer enrichment program puts students in clinical settings where they work for up to eight weeks and gain research and clinical patient care experience.

Students also are tracked by computer. Once they have been identified by membership in pre-professional clubs, they are followed by the Office of Minority Programs through middle school, high school and college—even into their chosen occupations. This component of the programs has been operating since 1990.

The Office of Minority Programs also spon-

sors a biennial statewide health careers fair to bring educators, health care employers, and other health professionals together with some of South Carolina's most promising students who aspire to become health care providers. The second biennial statewide health careers fair was conducted in March, 1992, and featured guest speaker Dr. Benjamin Carson, Chief of Pediatric Neurosurgery at Johns Hopkins Medical Center in Baltimore, Maryland. Carson, who led a surgical team that successfully separated Siamese twins in 1987, is a well-known advocate for minority advancement in health careers.

In recruiting minority students into careers in medicine, AHEC Minority Programs staff works closely with several programs originating within MUSC and the University of South Carolina (USC).

One such effort is the Role Models for Medicine Project. This project is an educational program designed by the USC School of Medicine to support South Carolina high school science programs and to encourage South Carolina high school students to consider and plan for medical careers in the state. This program provides role-modeling experiences through the use of video tapes describing the work of physicians and through campus visits to the School of Medicine to meet with medical students and medical school faculty members. Also, relationships developed among high school students, medical students and physicians are nurtured through ongoing correspondence, and additional face-to-face contact. AHEC Minority Coordinators utilize Role Models for Medicine video tapes to inform their participants about opportunities in medicine. They also select and accompany students during campus visits. In addition, AHEC representatives serve on the Minority Affairs Committee of USC School of Medicine to develop a comprehensive set of recommendations regarding long-term planning for minority student education in the health professions.

The AHEC Office of Minority Programs also works closely with programs initiated by

MUSC to attract students to the College of Medicine. For example, AHEC staff members assist in recruiting applicants for the Summer Health Careers Program which allows undergraduate students from minority and disadvantaged white groups to enrich their backgrounds in science, study skills, and MCAT preparation. Similarly, AHEC staff members inform MUSC officials of outstanding students at the undergraduate level who might qualify for early admission into the school of Medicine. Finally, AHEC is also collaborating with the MUSC Office of Minority Affairs in developing strategies to recruit minority residents from medical schools with large enrollments of African-Americans for placement within teaching hospitals in the state of South Carolina. Also, native South Carolinians attending traditionally black medical schools are being recruited to complete senior year rotations in South Carolina teaching hospitals. It is anticipated that such exposure will increase the likelihood of their seeking South Carolina residency training. Thus, at every point along the pathway to becoming a health professional, efforts are underway to increase minority participation.

PRELIMINARY OUTCOMES

The effectiveness of AHEC sponsored minority programs can now be more accurately assessed since the student tracking system was operationalized in 1990. Though preliminary, it provides some indication of the

prospects for the future. In addition, data maintained by the Medical University of South Carolina, The University of South Carolina, the South Carolina Commission on Higher Education, and the South Carolina Budget and Control Board illustrate progress toward increasing the number of minority physicians practicing in South Carolina.

A total of 1,751 students have participated in South Carolina AHEC minority programs since 1990. Table 1 summarizes the distribution of program participants by AHEC site, gender, educational level, and disciplines, for those matriculating at the postsecondary level. A review of the data reveals several significant characteristics. The majority of participants are African-American females, located in the urban areas of the state. Approximately 75 percent of the participants are matriculating at the high school level, with the remainder enrolled in colleges and universities. In addition, the majority of the college level participants indicate a sustained interest in the health care industry. The disciplinary interests of the participants includes the five major divisions of the health professions with the largest number of participants specifying allied health occupations (22%), followed by nursing (15%), medicine (13%), pharmacy (4%), and dental medicine (1%). It is also of note, however, that 42 percent of the college level participants have altered their original plans of pursuing careers in the health care industry.

TABLE 1
Characteristics of AHEC Minority Programs Participants by Location, Gender, Educational Level and Disciplinary Interest as of 1990*

Distribution by AHEC Sites	Distribution by Gender	Distribution by Educational Level	Distribution by Disciplines
Catawba Wateree = 87	Females = 1,460	Secondary School = 1,382	Pre Med = 48
Greenville = 858	(83%)	(79%)	Nursing = 57
Low Country = 275	Males = 291	Postsecondary = 369	Pharmacy = 18
Midlands = 114	(17%)	(21%)	Allied Health = 82
Pee Dee = 62			Dental = 6
Upper Savannah = 118			Other = 158
Spartanburg = 237			
			Total: 369

*Race was not included because of 99 percent of the participants are African-American.

MINORITY PARTICIPATION

TABLE 2

Baccalaureate Degrees Awarded By Race, Gender, and Selected Academic Discipline
in South Carolina
June 1985 V/S July 1990*

DISCIPLINE	BLACK				WHITE				OTHER				TOTAL			
	MALE		FEMALE		MALE		FEMALE		MALE		FEMALE		MALE		FEMALE	
	'85	'90	'85	'90	'85	'90	'85	'90	'85	'90	'85	'90	'85	'90	'85	'90
HEALTH SCIENCES	4	4	58	72	64	76	377	426	4	3	10	7	72	83	445	505
LIFE SCIENCES	32	17	49	63	248	277	199	253	10	19	11	14	290	313	259	330
PHYSICAL SCIENCES	16	14	17	8	150	114	43	52	7	5	6	3	173	133	66	63
TOTALS	52	30	124	143	462	467	619	731	21	27	27	24	535	529	770	898

*Source: South Carolina Commission on Higher Education, Finance and Information Services

Another set of data that serves as a preliminary indicator of the prospects of increasing minority participation in the health professions is revealed in the number of minority students successfully completing introductory courses in the sciences. The data presented in Table 2 illustrate the number of health related baccalaureate degrees awarded in South Carolina public and private institutions in 1985 and 1990 by race and gender. The selected disciplines include health science, life science, and physical science. An analysis of these data indicates that in 1985, 16 percent of the recipients of the health related baccalaureate degrees awarded in South Carolina were minority students. In 1990, the number of minority students receiving health related baccalaureate degrees in the state increased to 19 percent. Females constituted 68 percent of the minority group in 1985 and 75 percent of that group in 1990.

The data contained in Table 1 and Table 2 predict both challenges and opportunities for programs seeking to recruit minorities into the health professions in South Carolina. One of the most significant facts is the limited number of African-American males in the pool of students. African-American males are also least represented and show the greatest decline among the recipients of baccalaureate degrees leading toward careers in the health professions. An alternate way of viewing such information is to regard African-American males as constituting the most fertile

group for improvement. Whatever the case, a careful study of African-American males in the AHEC student tracking system might net valuable insights to inform future recruitment efforts. These data also indicate that the greatest potential for increasing the population of minority health professionals in South Carolina appears to rest with African-American females located in urban areas of the state. All but nine of the 48 individuals illustrated in Table 1 who are attending college and who indicated an interest in medicine are African-American females. This fact is also borne out in the data contained in Table 2.

Minority recruitment is acknowledged to be a major problem at all levels of medical education in South Carolina. Since 1971, MUSC's College of Medicine has graduated a total of 69 African-American physicians. The School of Medicine at USC has graduated 18 African-Americans since 1981. An objective of the Strategic Plan of MUSC's College of Medicine is to increase the college's complement of entering minority students to national averages of 10 percent with the matriculating class of 1995. Given the activities of the Minority Affairs Committee of the USC School of Medicine, it is likely that similar objectives will be adopted there.

CONCLUSION

Citing data showing minorities "losing ground," Robert G. Petersdorf, M. D., President of the Association of American Medical

Colleges, announced "Project 3000 by 2000," a plan to cultivate more minority representation in medical school. "The fact that the underrepresented minority student enrollment has not substantially increased since 1974 sends us a clear message that something more—or something different—needs to be done."³ Recommending the use of partnerships between academic medical centers, colleges and high schools, Project 3000 by 2000 focuses on improving academic preparedness, counseling, tutoring and access to reliable career information for minorities, as well as identifying potential students at earlier ages.

The South Carolina AHEC Student Development and Recruitment model and university programs described above incorporate virtually every recommendation proposed by Project 3000 by 2000. However, the AHEC model extends the outreach efforts to include areas beyond the immediate vicinity of the academic medical center to encompass a statewide network of partnerships between Area Health Education Centers and the public school system. Similarly, the short-term strategies of recruiting minority students already in college and the adoption of innovative admission agreements proposed in Project 3000 by 2000 are being practiced in the Summer Health Careers Program, the Joint Program in Post-Baccalaureate Study at MUSC, and in the early admission programs to the schools of medicine at MUSC and USC. Again, the AHEC model extends these short-term strategies by adding the recruitment of minority medical residents to the process. We believe that success in this area will have multiple effects. First, minority residents serve as role models for medical students and, therefore, attract a greater number of minority applicants to medical school. Secondly, it is anticipated that an increased number of minority residents would increase the number of minority physicians in the state as well as

increase the number of minority faculty members in the state's medical schools. The combined effect of such an increase in minority presence in the state's medical schools is expected to enhance the quality and reputation of the institutions, both statewide and nationally.

One of the underlying assumptions of South Carolina AHEC's Minority Programs is that efforts to increase the number of minority physicians in the state should be generalized to include efforts to expand the number of minority students in all of the health professions. Although, AHEC's immediate goal is to interest and assist minority students in their pursuit of health-oriented careers, the ultimate goal is to improve health care throughout South Carolina. Because the future of health care in South Carolina rests with the young men and women who are now studying in our middle schools, high schools, colleges, and universities, it is imperative that we work hard to identify the state's best and brightest students—our future doctors, nurses, pharmacists, dentists, researchers, and health care leaders. □

REFERENCES

1. South Carolina Budget and Control Board, Division of Research and Statistical Services.
2. Blacks and other minorities: A health status report, The South Carolina Department of Health and Environmental Control, 1988.
3. Petersdorf, Robert G.; Not a choice. An obligation, presented at the plenary session of the 102nd meeting of the Association of American Medical Colleges, Washington, D.C., November 10, 1991.

EDITOR'S NOTE

Dr. Earl B. Higgins, second author of this article, died suddenly on August 30. He served as MUSC executive assistant to the president for minority affairs and affirmative action for the past five years prior to his untimely death at age 45. "He was a man of integrity and well respected by the entire Medical University family. He had a sense of humor and was dedicated to improving the health care of all South Carolinians. We will miss him," said Dr. James B. Edwards, MUSC president. We echo the words of Dr. Edwards; Dr. Higgins will be missed across South Carolina.

PRECLINICAL PRIMARY CARE – PRECEPTORSHIPS AND THE STUDENT HEALTH COALITION

OTIS L. BAUGHMAN III, M. D.*

JAMES BELL, M. D.

JAMES G. HALFORD, JR., M. D.

INTRODUCTION

Many students entering medical school as freshmen profess an interest in becoming primary care physicians. It is an interest that frequently decreases as students progress through their subspecialty oriented university training.¹ Enhancing interest in primary care is a key goal of enlightened medical educators and, increasingly so, of state and federal government as well.^{2,3}

The exposure to realistic primary care practice experiences and practitioners to serve as role models are effective ways of showing medical students the rewards and realities of frontline medicine.^{4,5} With core rotations filling up the junior year and with most students choosing their specialty before the elective opportunities of the senior year, little time is available for primary care exposure.

Two primary care preclinical opportunities exist for medical students in South Carolina. One is the South Carolina Student Health Coalition. The other is the South Carolina Academy of Family Physicians Student Preceptorship Program.

SOUTH CAROLINA STUDENT HEALTH COALITION

The South Carolina Student Health Coalition was founded in 1978. The coalition is a voluntary organization staffed by students of medicine, dentistry and nursing from the

Medical University of South Carolina and the University of South Carolina School of Medicine. Two medically underserved communities are chosen each year, and coalition officers make contact with community officials to plan for a three-week invasion by over 30 students. The coalition establishes a health screening clinic, most often in a local school or church. The communities chosen provide housing and meals for the students. This unique aspect of the program gives the students an opportunity to actually live in a rural community and interact with the patients and community leaders.

Each clinic runs about three weeks and offers a free medical examination including routine laboratory work and a dental screening. Volunteer physician preceptors supervise all services delivered. The preceptors are most commonly faculty and residents from the seven family medicine residency programs.

The coalition gives the students an opportunity to hone their physical diagnosis and dental screening skills prior to beginning the junior year. Under the guidance of their preceptors, the students get a taste of what it is like to be a health professional in a rural setting. Any problems discovered by the students are referred to the nearest dental and medical facilities. The students provide health screenings for 450-550 area residents in each community.

Since its founding in 1978, the South Carolina Student Health Coalition has served over 30 rural communities and over 11,000 patients across the state. (See Table 1.) The

*Address correspondence to Dr. Baughman at the Department of Family Medicine, Spartanburg Regional Medical Center, 101 East Wood Street, Spartanburg, SC 29303. Dr. Bell is in private practice in Hartsville, and Dr. Halford is Director Emeritus at the Anderson Family Practice Center, Anderson Memorial Hospital.

TABLE I
COALITION SITES

Britton's Neck	1979
Bethune/McBee	1979
Olanta	1979
Ridge Spring	1981
Westville	1981
Ridgeville	1981
Whitmire	1982
Pinewood	1982
Aynor	1982
Hickory Grove	1982
Eastover	1983
Ruffin/Williams/Smoaks	1983
Lynchburg	1984
McCormick	1984
Great Falls	1985
Dillon	1985
Blacksburg	1986
Estill	1986
Ninety-Six	1987
Slater Marietta	1987
Union	1988
Summerton	1988
Cheraw	1989
St. George	1989
Heath Springs	1990
Pickens	1990
Chesnee	1991
Williston	1991
St. Matthews	1992
Wagener	1992

Over 11,000 Patients Screened in Over 30 Rural Communities

longevity of the Coalition has been made possible by funds from the South Carolina Area Health Education Consortium (S. C. AHEC), the Medical University of South Carolina in Charleston and the USC School of Medicine in Columbia.⁶

SCAFP STUDENT PRECEPTORSHIP PROGRAM

In the summer of 1989, the South Carolina

Academy of Family Physicians (SCAFP) began the SCAFP Student Preceptorship Program. This program is the result of the vision of the 1989 President of the SCAFP, James Bell, M. D., of Hartsville, South Carolina. Within the academy, the program is commonly called "The Bell Plan." It was under Dr. Bell's leadership that the Student Preceptorship Program moved from paper to a financially viable opportunity for medical students to gain experience in a family physician's practice.

Dr. Bell and other members of the SCAFP went to area industries and other organizations, including the S. C. AHEC, to elicit grants and contributions to support this effort, with great success. The funds received are managed for the Preceptorship Program by the Family Health Foundation of South Carolina, the philanthropic arm of the S. C. Academy of Family Physicians.

The Preceptorship Program places medical students for either two or four weeks in family physicians' offices throughout the state during their summer break in order to expose them to the speciality of family medicine in a community setting. The solid funding of the program allows the Family Health Foundation to give each student a stipend. This unique aspect of the program allows students to voluntarily give up part of their summer to further their skills and experience of the practice of medicine and still earn some money for the coming school year.

Members of the SCAFP volunteer to host the medical students. The physician provides housing, often in his/her own home, and meals for the students. The students work side by side with their physician sponsors, seeing patients in the office, the emergency room, on hospital rounds, and during home visits. They receive personal instruction in many of the myriad skills that a family physician must apply in the practice of general medicine.

Since the founding year of 1989, 137 students have gone to over 60 family medicine practices throughout the state. The location of

the sites reflects the primary care needs of the state. Some sites are urban or inner city, some are in small to medium sized towns and others are decidedly rural. All are experiences that are frequently described as stimulating, fascinating, and, sometimes, intimidating. The perception of family medicine as an intellectually challenging and professionally stimulating specialty has been reinforced in all participating students. This was one of the key goals of the SCAFP.⁷

A NATIONAL CONTEXT

The true picture of primary care as a needed, viable, and satisfying discipline is arguably best provided outside of the campus of a tertiary care center. Efforts to expose medical students to primary care in the preclinical years and away from the subspecialty focus of the university setting provides the student with a more realistic view of the breadth of the practice of medicine.

The nation is beginning to realize that access to health care is in a crisis, largely through decades of subspecialization as a key goal for the advancement of medicine. This problem is receiving the attention of the Association of American Colleges (AAMC), which recently established a "task force on the generalist physician." The task force's charter is "to survey the terrain and articulate a policy for AAMC" about goals for training generalist physicians. The appointment of the task force is dramatic evidence of the recognition of the need to produce more primary

care physicians. Going a step further, the Council on Graduate Medical Education (COGME) recently established an outcome measure that 50 percent of all physicians be trained for generalist careers (e.g. family physicians, general internists, and general pediatricians).

Medicine in the suburbs, small and medium sized towns, and in rural areas is delivered by the primary care specialists. Through the South Carolina Student Health Coalition and the South Carolina Academy of Family Physicians Student Preceptorship Program medical students learn early where their skills are most needed and experience the joy and challenges of primary care medicine in the 1990s. □

REFERENCES

1. Rabinowitz HK. The change in specialty preference by medical students over time: An analysis of students who prefer family medicine, *Fam Med.* 1990; 22: 62-63.
2. Colwill JM. Where have all the primary care applicants gone? *NEJM* 1992; 326 (6): 387-392.
3. Petersdorf RG. Primary care applicants – They get no respect. *NEJM* 1992; 326 (6): 408-409.
4. Erney SL, Allen DL, Siska KF. Effect of a year-long primary care clerkship on graduates' selection of family practice residencies. *Acad. Med.* 1991; 66 (4): 234-236.
5. Greer T, Carline JD. Specialty choice by medical students: Recent graduate follow-up survey at the University of Washington. *Fam. Med.* 1989; 21: 127-131.
6. South Carolina Area Health Education Consortium 1990-91 Progress Report.
7. The South Carolina Family Physician. 1991; 29 (2):1, 11.

DEVELOPMENT AND IMPLEMENTATION OF A MULTI-SITE JUNIOR CORE CLERKSHIP IN FAMILY MEDICINE*

ALEC CHESSMAN, M. D.**

IMOGENE SMITH, ED. D

Interest by U. S. medical students in family practice and other primary care specialties has declined in recent years.¹ Interest in family medicine by medical students at the Medical University of South Carolina (MUSC) has not declined in recent years, but neither has it increased. However, recent reports have focused on the need for and recommended strategies to increase the supply of primary care specialists.² Some have reasoned that students' interest, and subsequent choice of specialty, is affected by required third-year clerkship experiences³

Prior to 1991, third-year medical students at MUSC were required to rotate through clerkships in obstetrics/gynecology, pediatrics, internal medicine, surgery, and psychiatry. These clerkships are hospital-based with emphasis on in-patient care. Students' exposure to out-patient/ambulatory care, and specifically to family medicine, was limited to an Introduction to Clinical Medicine (ICM) course offered during the second year for one semester two hours per week. Although this course was taught by family medicine faculty to small groups of students, it had no clinical component and little opportunity for students to learn about family medicine as a practice discipline. A fourth year elective provided the only additional opportunity. Therefore, a third-year clerkship in family medicine was seen as a logical step to fulfilling the needs

for exposure to primary care as a practice specialty and training for out-patient/ambulatory care.

Planning for the third-year clerkship at MUSC began with the recognition of these needs. In 1990, the Public Health Service funded a pre-doctoral training grant for one-half million dollars for three years to MUSC. An established network of S. C. AHEC Family Practice residency programs, including five community-based programs in Anderson, Florence, Greenville, Greenwood and Spartanburg, and the two university-based programs in Charleston and Columbia, provided a strong foundation for a successful off-campus ambulatory care clerkship. The purpose of this article is to describe the development, implementation and initial results of the first year of this clerkship.

CURRICULUM PLANNING

Funding from the grant began in 1990-91 with organization and planning the clerkship. The Family Practice residency programs were designated as training sites. A program coordinator from each site formed the South Carolina Family Practice Core Clerkship Committee.[†] During the 1990-91 academic year the Committee planned and implemented the curriculum.

The first step toward implementation of the clerkship occurred when the MUSC College of Medicine Curriculum Committee approved

*The Family Medicine Core Clerkship is supported in part by grant number 5 D15 PE 84062 from the Public Health Service's Bureau of Health Professions.

**Address correspondence to Dr. Chessman at the Department of Family Medicine, Medical University of South Carolina, 171 Ashley Avenue, Charleston, SC 29425.

† Drs. Larry Atkinson (Anderson), Lindsey Cone (USC), Alec Chessman (chair), Richard King (Greenville), David Ruiz (Greenwood), Imogene Smith (Dept. Educational Services, MUSC), Hilton Terrell (Florence), and Jack Whittaker (Spartanburg).

the need for a family medicine core clerkship. Reorganization of the third year curriculum followed this decision. Subsequently, four weeks was designated for the family medicine core clerkship for junior MUSC students beginning July 1991.

The Core Clerkship Committee began planning with review of curricula from 20 established family medicine core clerkships throughout the U. S. and a review of literature. This process provided the Committee with a foundation for making curricular decisions involving content and implementation. Following this review, goals for the clerkship were adapted from the guidelines of the Society of Teachers of Family Medicine. The goals of the clerkship are shown in Table 1.

Using these goals as a basis, the committee agreed upon required learning activities, including a home visit and videotaped review of a student-patient encounter. The committee developed a plan for evaluating student learning including clinical and knowledge-based learning.

The committee selected 24 common acute or chronic medical problems as the content focus of the curriculum. They reviewed journal articles to support teaching about these medical problems. The journal articles were intended to supplement the required text, *Essentials of Family Medicine*, by P. D. Sloane, L. M. Slatt and R. M. Baker, and provide in-depth information on specific aspects of each medical problem.

TABLE 1
GOALS FOR THE MUSC JUNIOR FAMILY MEDICINE CORE CLERKSHIP
PHYSICIAN-PATIENT RELATIONSHIP

The physician should be able to establish an effective relationship with a patient. The physician should also learn how to recognize unusual or difficult relationships and how to respond to them.

Health Promotion/Disease Prevention

The physician should know how to assess and manage a patient's health risks. The physician should understand the principles behind disease prevention programs, and use these programs appropriately.

Common Acute and Chronic Problems

The physician should be able to assess and manage twenty common acute and chronic medical problems. These common problems are: abdominal pain, alcohol abuse, anxiety, chronic respiratory disease, chest pain, congestive heart failure, contraception, depression, diabetes mellitus, dizziness, headache, hypertension, health maintenance, joint sprains/injuries, low back pain, obesity, upper respiratory infections, dysuria, vaginitis, sore throat.

Health Care Management

The physician should learn how to manage a patient's health care. Effective management includes developing and maintaining a continuing relationship with the patient and everyone involved in the patient's care, including family, community, other health care workers, and organizations that pay for that patient's medical care. The physician needs to know how to coordinate a patient's care by using appropriate resources.

Critical Appraisal and Clinical Epidemiology

The physician needs to know how to interpret the medical literature in the light of his/her specific patient population. The physician should have a basic understanding of different research designs, such as cohort and case control studies. The physician should understand central concepts of research about etiology, diagnosis, screening, and treatment.

System-Oriented Care

A physician must understand a patient in context. In order both to understand the full meaning of a patient's situation and to intervene appropriately, the physician must consider the patient's family, community, and socioeconomic background.

Initially, rising third year students were reluctant to accept the change in the junior year curriculum. However, grant monies provided students with assistance for transportation to and from each off-campus site. Room and board was provided for students by each site. In addition, students were given the opportunity to choose their preferred clerkship site, and those with special hardships, such as single parents with children, were given preference for staying in the Charleston area.

Final preparations for the clerkship included the writing and publication of a syllabus for each student. The syllabus provided the continuity necessary for a multi-site clerkship experience. It included requirements to complete the clerkship, goals and objectives, a list of readings, learning activities, and evaluation criteria.

IMPLEMENTATION

The first year of the family medicine core clerkship began in July 1991 and ended in July 1992. A total of 123 students matriculated through the four-week experience Table 2 indicates the number of students who were taught at each site.

Students were required to complete a Patient Care Experience form for each significant patient encounter. The data from these forms will enable the Clerkship Committee to inspect the types and numbers of medical problems which students dealt with and to make comparisons among the sites. The data for the first year are currently being compiled.

The Clerkship Committee recognized that the first year of any educational innovation requires continual revision based upon student achievement and feedback from students, faculty and residents. At the conclusion of each four-week rotation, each site coordinator solicited feedback from students either by questionnaire or by exit interview. After returning to Charleston on the final day of the clerkship, students completed a three-hour written exam. Then they were asked for their

TABLE 2
Number and Percentage of MUSC Junior Students Taught at each AHEC Family Practice Residency Site, 1991-1992

	<u>Number</u>	<u>Percentage</u>
Anderson	19	15%
Charleston	29	23%
Columbia	5	4%
Florence	17	14%
Greenville	18	15%
Greenwood	27	14%
Spartanburg	18	15%
Total	123	100%

opinions and experiences regarding the clerkship. Two forms of feedback were collected from students: first, written feedback on a standardized course evaluation questionnaire, Personalized Assessment of Course Effectiveness (PACE), required of all College of Medicine courses, and second, verbal feedback in the form of a focus group.

The focus group brought together all students (approximately 10-12) from each site for a semi-structured discussion. The discussion was moderated by a person uninvolved with the development and implementation of the clerkship; it was also audiotaped. The tape was subsequently transcribed. Students' comments were analyzed and summarized; recommendations for curricular and organizational changes were forwarded to the clerkship director and each site coordinator.

In addition to this direct feedback, student attitudes toward family medicine were measured both before and after participating in the four-week clerkship using a questionnaire developed specifically to measure attitudes toward family medicine.⁴ The data from students' responses to this questionnaire are currently being analyzed.

After each series of three rotations, results of student achievement on clinical and didactic measures as well as PACE and focus group feedback were communicated to the

Core Clerkship Committee in reports and discussions at quarterly meetings. Consequently, several changes were made during the year, including simplification of the syllabus, revision of the clinical evaluation form, creation of learning objectives for the required reading list, and modification of the final examination. The Clerkship Committee will continue to monitor and revise the curriculum this year.

RESULTS AND IMPLICATIONS

As the third and final year of the grant project begins, some important short-term results from the first year are known. Data to analyze long-term results will be collected for the next several years.

First, the clerkship was developed and implemented with a minimum of stress and hardship for students involved in the change. Initially students expressed reluctance to go off-campus; however, feedback about the clerkship has been extremely positive. Students enjoyed the experience and indicated that they learned to appreciate the value and complexity of the primary care physician's role. As one student summarized, "I have a lot of respect for them...it can be quite intricate at times. They seem to be quite capable of handling all the complicated stuff." Students also reported that they spent 75 to 100 percent of their clerkship time devoted to issues relating to outpatient/ambulatory care. The emphasis on ambulatory care was regarded as a very worthwhile experience.

Responses on the written course evaluation (PACE) were very favorable for the clerkship as a whole and for each site. PACE was completed by 85 percent of all students (N=123) matriculating through the clerkship in 1991-92. Over 90 percent of students completing the questionnaire felt that the clerkship provided clinical responsibilities commensurate with their abilities, provided sufficient opportunities to develop their clinical skills, was intellectually challenging, helped them to

apply basic science information to clinical situations, and developed their abilities to communicate with and teach patients. Students were even more positive regarding their instructors. Over 90 percent of students completing the questionnaire felt that their instructors were effective teachers, gave constructive criticism, spent sufficient time with them and were usually available for assistance, identified important clinical skills, were concerned about whether their clinical skills were improved, answered questions carefully, and seemed to be interested in teaching.

Students' responses to PACE indicated that improvements in the clerkship for the 1992-93 year should be considered in regard to the specification of performance requirements, content of the final exam, fairness of the clinical evaluation process, and students' motivation to do independent study.

These reports from students indicate that the first year of the clerkship, although it was a transitional year, was very positive. The coordinators, faculty, residents, other health care personnel and staff at each site provided an educationally inviting and challenging environment for MUSC students to learn the art and science of ambulatory care. As the third and final grant year begins, it is anticipated that the clerkship will continue in this favorable direction, and long-term goals will be fulfilled. □

REFERENCES

1. Campos-Outcalt D, Senf J, Pust R. Family practice specialty preference before and after a required clerkship. *Fam Pract Res J* 1992; 12; 213-221.
2. Politzer RM, Harris DL, Gaston MH, Mullan F. Primary care physician supply and the medically underserved: a status report and recommendations. *JAMA* 1991; 266; 104-109.
3. Rucker L, Morgan C, Ward KE, Bell BM. Impact of an ambulatory care clerkship on the attitudes of students from five classes (1985-1989) toward primary care. *Acad Med* 1991; 66; 620-622.
4. Edwards JC, Evans DW, Kissling GE. Measuring attitude toward family medicine. *Fam Med* 1985; 17; 4-7.

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SCMA NEWSLETTER

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HIGHLIGHTS OF SEPTEMBER 18-20 BOARD OF TRUSTEES MEETING

The board heard a progress report from the "Free Clinic" Task Force. The State Board of Medical Examiners has proposed to waive the SPEX exam for physicians practicing in charitable settings who have had a previous license in good standing as long as a licensed physician is on site.

In response to physicians' requests for the SCMA position on mandatory posting of fees, the board adopted an

ethical position that physicians provide fee information upon request.

The board expressed continued support for the Palmetto Project. SCMA members will be contacted soon to request volunteer participation in this project.

The board voted that the SCMA would make a contribution to the Florida Medical Association Hurricane Relief Fund to assist physicians in southern Florida. □

MEDICARE UPDATE

As this newsletter goes to press, the House and Senate Conferees were expected to begin consideration of H.R. 11, a tax/urban aid bill which is serving as the vehicle for end of the session Medicare and Medicaid amendments.

On September 29, S. 3274, a Bentsen-Packwood package of Medicare/Medicaid provisions was attached as an amendment to H. R. 11 during Senate floor action. As is usually the case with end of session packages, the Medicare/Medicaid amendments contain provisions that the federation of medicine has advocated as well as items that it opposes.

On the plus side, H.R. 11 contains Medicare provisions to:

- repeal payment disparities for "new" physicians,
- restore payments for EKG interpretations,
- improve Geographic Practice Cost Indices (GPIs),
- address a host of other technical and specialty specific issues that are supported by federation members.

Medicare/Medicaid amendments contained in H.R. 11 which the AMA opposes include over-zealous enforce-

ment of existing Medicare balance billing limits. An example of excessive enforcement measures would be a \$1 threshold for triggering refund notices.

Separate from the Medicare package, in an effort to advance incremental health reforms, the Senate approved a bipartisan amendment to H.R. 11 in late September that incorporated the provisions of Bentsen's insurance market reform bill (S. 1872). The Bentsen amendment includes insurance market reforms that are consistent with Health Access America and one area of concern to the AMA. The Bentsen amendment would repeal state laws regulating managed care and utilization review programs. Federal criteria would preempt state laws regulating managed care and UR programs. The Bentsen amendment was previously adopted by the Senate earlier this year as part of an economic stimulus package but was later dropped in conference committee. This latest version of the Bentsen insurance market reforms may again be dropped in conference committee.

Congress is expected to adjourn by October 5. Watch for complete details regarding the Medicare/Medicaid amendments in next month's newsletter. □

MEDICAID UPDATE

Social Security Income (SSI) for Premature Infants:

SSI is payable to minor children who are disabled. Normally we think of "disability" as involving mental or physical impairments. Premature infants may be eligible without meeting a complex definition of "disability." Social Security disability regulations state that two specific categories of premature infants "will be found disabled...at least until attainment of a chronological age of 12 months:" (1) those born weighing less than 1200 grams, and (2) those born weighing 1200 - 2000 grams who are "at least four weeks small for gestational age."

SSI for Newborns: South Carolina Social Security offices are beginning an outreach program this month to alert hospitals with neonatal low birth weight criteria. It is easy to protect the benefit rights of these children. A simple phone call to the Social Security Administration's toll-free number (1-800-772-1213) is all that is needed. If you are involved in any way with this infant population, have parents of these premature infants call SSA as soon after the child's birth as possible. If the parent is unable to call,

the hospital social worker can do it, or a member of the family.

Norplant Price Increase: Effective with date of service 10/1/92, the allowance for S0097 (Norplant cost) will be raised to \$365.00. The additional \$15.00 reflects the recent increase in the cost of Norplant. Medicaid does not pay the sales tax for Norplant.

Physician Fee Reductions: Fee reductions of five percent on selected procedures will become effective beginning with date of service 10/1/92. A Medicaid bulletin detailing the affected services will be forthcoming. A complete fee schedule will be published and distributed later this year.

Clinical Laboratory Improvement Act (CLIA): Implementation of CLIA for payment purposes has been postponed until at least December, 1992. Further details concerning CLIA regulations will be released in an upcoming Medicaid bulletin. ☐

OSHA UPDATE

Bloodborne Pathogen Rule Addendum: On July 28, 1992, the SC Department of Labor issued an addendum to the Bloodborne Pathogen Rule. Although providing the HBV vaccination is still technically required, the department will not issue a citation if employers do not offer the HBV vaccine to designated first aid providers if: (a) their normal job assignment is not the rendering of first aid; and (b) the exposure control plan addresses the provision of HBV vaccine, post-exposure prophylaxis, and follow-up to all unvaccinated first aid providers who have rendered assistance in any situation involving the presence of blood or Other Potentially Infectious Material (OPIM).

The department will continue to require that the exposure control plan contain provisions for reporting all first aid incidents involving blood or OPIM, and the employer must ensure that designated first aid providers have been trained on the Bloodborne Pathogen Standard.

This change is important for employers who are considering requiring employees not normally exposed to blood or OPIM to have the HBV vaccine series and should

somewhat reduce the cost of compliance with the Bloodborne Pathogen Standard. *If you would like a copy of the addendum, contact Ms. Dana Woods at the SC Department of Labor in Columbia at 734-9600.*

Updating Exposure Control Plan: The Exposure Control Plan is the most important document to be maintained by physicians regarding the OSHA bloodborne pathogens standard.

In the unlikely event of an OSHA inspection, the Exposure Control Plan will be used by the inspector as a key to how well a physician is complying.

The plan is not a passive document. It will need periodic updating:

- at least annually;
- when new tasks and procedures that affect occupational exposure are added;
- when tasks and procedures that affect occupational exposure are changed or modified; and
- when new employee positions with occupational exposure risk are added or when employee positions are changed to include the exposure risk. ☐

DON'T FORGET TO VOTE ON NOVEMBER 3!

HURRICANE RELIEF FUNDS

For many of us, the news of Hurricanes Andrew and Iniki struck a familiar chord. Just three years ago, South Carolinians were dealing with the devastation wrought by Hurricane Hugo. During this time, South Carolina physicians were assisted by other physicians and medical associations nationwide.

The Florida Medical Association has set up a fund to help those physicians who have suffered partial or total loss of their practices. If you would like to make a tax deductible contribution, send donations to: *Florida Medical Association/Hurricane Relief Fund, P.O. Box 2411, Jacksonville, FL, 32203. The staff contact person is Cynthia B. Jackson, Director, Division of Finance. She may be reached at (904) 356-1571.*

The Hawaii Medical Association is also accepting contributions. *Tax deductible donations may be made to: HMA Community Research Bureau, 1360 Beretania St., 2nd Floor, Honolulu, HI 96814.*

SCHREF RURAL LOAN PROGRAM

The South Carolina Hospital Association, with funding through its foundation, South Carolina Hospital Research and Education Foundation (SCHREF), has established a revolving loan program to assist rural hospitals and rural communities in the recruitment of physicians. The program is being administered by the First Union National Bank of South Carolina, Columbia Office. Specific uses of the loan are: (1) to provide working capital for the development of new practices; (2) to provide working capital for the expansion of an existing practice (addition of new providers); (3) to renovate existing health facilities or purchase needed equipment as a part of recruiting new service providers to the area; (4) to fund conversions of practices into rural health clinics; and (5) to provide a low interest loan as a part of a total recruitment package.

For additional information, contact Jim Walker at the SCHA in Columbia at 796-3080, or Eric Westbury at First Union National Bank in Columbia at 251-4473.

CLIA UPDATE

Offices to Receive Three-day Notice for Inspections: A concerted lobbying effort protesting unannounced CLIA-88 inspections has resulted in a major victory for the AMA. By letter to Dr. James Todd, AMA Executive Vice President, Health and Human Services Secretary Louis Sullivan, MD, has advised that physicians' offices will NOT be subject to unannounced CLIA-88 inspections unless a problem is suspected or a complaint has been received.

In his letter, Dr. Sullivan stated, "We recognize, as you do, that there are many laboratories which were not previously regulated that will require some on-site education during the survey. The initial survey will include an explanation of the survey process, discussion of any deficiencies identified, and information about mechanisms to comply. The routine survey during the first two-year cycle will be used to improve the quality of laboratory testing rather than to penalize the laboratory for noncompliance."

The statute affords Dr. Sullivan the discretion to conduct laboratory surveys on an announced or unannounced basis. The guidelines now provide state survey agencies authority to give laboratories advance notice of three working days prior to a routine survey in those cases where laboratory personnel are likely to be unavailable, where the laboratory may be closed, or in instances where special travel arrangements may be necessary. As men-

tioned earlier, unannounced surveys will be conducted when a problem is suspected, a complaint has been filed, or in other rare instances as warranted by the circumstances.

Microscopy Tests: The complete HHS statement on CLIA implementation advises that further modification of the CLIA regulation may be necessary for some microscopy tests. DHHS is considering allowing some microscopy, which is performed by a physician, to be a waived test.

Implementation: With regard to the mechanics of CLIA implementation, several points are of importance for the physician who will be affected by CLIA over the next two years. The process of surveying clinical laboratories will begin with the largest facilities. Thus, most of the surveys this year will involve those commercial and hospital laboratories which were already subject to federal oversight. The first biannual inspections of physicians' facilities will take place in 1993 and 1994. The purpose of the initial inspection of physician facilities will be primarily educational.

Even though laboratories should have registered with HCFA under CLIA by September 1, HCFA will continue to pay laboratory claims without regard to CLIA registration until December 1. □

AMERICAN HEART ASSOCIATION RESEARCH GRANTS

Grant-in-Aid and Fellowship applications are now available from the American Heart Association, SC Affiliate, Inc., with a deadline of December 7, 1992, for submission to the Association's Research Committee. *Information and application forms may be obtained from the American Heart Association, SC Affiliate, Inc., PO Box 6604, Columbia, SC 29260.*

General requirements are that applicants must have advanced degrees and contemplate significant basic or cardiovascular research in a non-profit institution with adequate facilities for their work. This research program is separate from that of the American Heart Association, National Center, which also makes research awards to scientists in South Carolina, for which applications will be available in January of 1993. ☐

AMA HOSPITAL MEDICAL STAFF SECTION 20TH ASSEMBLY MEETING

The AMA Hospital Medical Staff Section 20th Assembly Meeting will be held December 3-7, 1992 at Opryland Hotel in Nashville, Tennessee. Medical staffs are encouraged to elect a representative to attend this meeting, which provides a unique opportunity to discuss and participate in the policymaking process of the AMA. In addition to the Assembly Meeting, there will be educational programs on "A Futurist's Picture of Health Care 2000," and "Physician/Hospital Organizational Models for the Future."

For further information, please call (312) 464-4754 or 464-4761. ☐



FEEDBACK FROM THE FIELD

We continue our monthly survey to access members' thoughts on a variety of issues and topics. We need to know what you think and what your concerns and suggestions are. ***Please complete and return the survey below to: Survey Results, South Carolina Medical Association, P.O. Box 11188, Columbia, SC 29211.***

CHARITY CARE

1. How many hours do you spend per week providing reduced fee and free medical care? _____?
2. If there is a free health care clinic in your area, do you serve as a volunteer? _____?
3. What are the greatest barriers to providing charity care?
 - _____ Threat of lawsuits
 - _____ Difficult, disagreeable patients
 - _____ Lack of time
 - _____ Financial pressures
 - _____ Continuity of care
 - _____ Other
4. Are you aware that you may have some legal protection from malpractice suits when you provide charity care? (See page 4 of the August Newsletter.)

Comments: _____

ACADEMIC/PRIVATE PRACTICE PARTNERSHIPS IN THE USC FAMILY MEDICINE JUNIOR CLERKSHIP*

D. LINDSIE CONE, M.D.**

CHARLES T. MCELMURRAY, M.D.

Medical educators are placing a greater emphasis on outpatient healthcare delivery systems, due in part to fundamental changes in reimbursement procedures over the past decade. This emphasis, coupled with the continuing shortage of primary care physicians across the country, has led to a re-examination of the rationale of traditional hospital-based medical education. Innovative new programs are designed to foster interest in primary care.

Since medical students typically decide on a specialty relatively early in their clinical training, it is important to expose students to the primary care specialties early in their educational process. This early exposure would serve as an introduction to those students who had no prior knowledge or interest in the primary care specialties. Early exposure would help solidify the desires of those students who may be inclined to become a primary care-giver, convincing them of the various benefits, challenges, and rewards. In addition, early exposure would introduce the specialty to those who otherwise might not have considered the field.

Since its inception in 1974, the University of South Carolina School of Medicine has been dedicated to the education of primary care physicians. Family medicine is a primary care specialty which provides health care services to individuals across a broad demographic, social, and clinical spectrum. In an attempt to promote primary care and provide

more family physicians for the state, the USC School of Medicine has developed a strong undergraduate family medicine curriculum which is implemented in each of the first three years of medical school. The courses in the first two years emphasize basic physical diagnostic skills and introduce the students to problem-oriented ambulatory care. The major focus of the curriculum, however, is the junior core clerkship in Family Medicine.

During this eight-week clerkship students at both the Columbia and Greenville campuses spend four weeks in a residency-based teaching environment. This allows contact with multiple health care providers and allows them to see various practice styles in both the inpatient and outpatient setting. The remaining four weeks are spent with community-based family physicians. This private practice setting allows the students to experience a different learning environment from that usually encountered on other medical school rotations. The clinical faculty members accept students into their practices and expose them to the "real world" of primary care. Students are able to see, first hand, the variety of clinical problems that can be skillfully managed by the primary care provider in the office setting. They are also able to better appreciate the importance of continuity in the doctor-patient relationship and how this affects the long term care of the patient. Exposure to the private practice setting also makes it possible for the student to experience the day-to-day workings of a busy office practice and gain insight into the business aspects of practice management, advantages not realized in other clerkships.

In addition to the suburban community

*From the Department of Family Medicine, University of South Carolina, Columbia, SC.

**Address correspondence to Dr. Cone at the Department of Family Medicine, University of South Carolina, Columbia, SC 29208.

experience, plans are also under way to provide for a rural educational experience as well. Soon students will be involved in a collaborative, interdisciplinary project in rural Fairfield county as part of their family medicine core rotation. While in the rural setting students will be exposed to the unique problems encountered by the local physicians and other health care providers in a medically underserved area. They will be able to better understand the need for an interdisciplinary approach to health care and hopefully come to appreciate the advantages of practicing in a

small town.

This clinical experience is unique in that it gives the students an opportunity to see the practice of medicine in a more realistic light. With medical education in a period of transition, this type of course speaks to the need for more outpatient-based teaching and exposes medical students to primary care at an optimal time in their education. This alternative to hospital-based training serves to encourage students to continue to learn and practice primary care. □

PHYSICIAN RECOGNITION AWARDS

The following SCMA physicians are recent recipients of the AMA's Physician Recognition Award. This award is official documentation of Continuing Medical Education hours earned.

Elizabeth R. Baker, M. D.
 William R. Bixenman, M. D.
 Paul E. Bjork, M. D.
 William N. Boulware, M. D.
 Jerre K. Chambers, M. D.
 Clarence E. Coker, M. D.
 Eugene C. Crisler, M. D.
 Lawson B. Freeman, M. D.
 Richard J. Friedman, M. D.
 Nguyen N. Giep, M. D.
 Winston Y. Godwin, M. D.
 P. Gopalakrishnan, M. D.
 Malvern C. Holland, M. D.
 Frank F. Humbles, M. D.
 Joseph P. Jackson, M. D.

Joe N. Jarrett, M. D.
 James L. Jewell, M. D.
 Louis M. Kent, M. D.
 Philip A. McGowan, M. D.
 Ayub A. Merchant, M. D.
 Oswald L. Mikell, M. D.
 Robert E. Mitchell, M. D.
 Rosemarie M. Morwessel, M. D.
 Afolabi Oguntinyinbo, M. D.
 John R. Satterthwaite, M. D.
 Edward Shumunes, M. D.
 Jeffrey A. Siegel, M. D.
 Eugene F. Smith, M. D.
 Frederick C. Swensen, M. D.
 Lloyd B. Williams, M. D.

COMMUNITY-ORIENTED PRIMARY CARE IN A RURAL COMMUNITY: THE HAMPTON COUNTY PROJECT

DAVID GARR, M.D.*

BACKGROUND

Hampton County is a predominantly rural county with approximately 20,000 people, with significant economic and health needs. It is located in the southern portion of South Carolina with its southwestern border adjacent to the state of Georgia.

As has been the case in many rural counties within and outside South Carolina, the provision of optimal health care services has been problematic. At one time Hampton County had as many as eight full-time practicing physicians. By 1989, the number of full-time physicians had decreased to four. Community leaders and the health care professionals in the county became very concerned about their inability to attract additional physicians to the county.

Harrison L. Peebles, M. D., had been in practice in Hampton County for 48 years. Dr. Peebles and other citizens from the county sought assistance from the South Carolina legislature through the South Carolina Area Health Education Consortium (S. C. AHEC). The legislature allocated start-up funds to be used to establish a clinical practice which would serve as rural primary care education center for health profession students and family medicine residents. Additional money was secured through a competitive grant for a Health Education and Training Center (HETC) from the national AHEC office¹ and from a contribution by the Department of Family Medicine at the Medical University of South Carolina to support training in rural health.

A COOPERATIVE EFFORT

The central office of the S.C. AHEC assembled a multi-disciplinary task force to help develop the new rural practice. Those comprising the task force included local health care professionals, community lay representatives, and faculty from the Medical University of South Carolina (MUSC) and from the University of South Carolina (USC). The group held its first meeting in December, 1989 and met on a monthly basis for eight months. During that time, extensive planning occurred which led to the formation of a non-profit corporation and the replacement of the task force with a nine member Board of Directors.[†] The task force determined that clinical service and education were the purposes for the new clinical practice, and the practice would be developed utilizing the principles of community-oriented primary care (COPC).^{2,4} One of the critical components of a successful COPC program is that the services provided meet the needs of the community. Thus, the task force recommended that a health needs assessment of Hampton County be conducted. The Department of Health Administration at the School of Public Health at the University of South Carolina completed the needs assessment in September of 1990. The information contained in their report served to guide the subsequent design of the health center and its provision of clinical services.

[†]The board was composed of three health professionals and three lay people from Hampton County, and three educators drawn from both MUSC and USC. The administrator of the local hospital and S. C. AHEC staff were appointed as ex-officio members of the board.

*Address correspondence to Dr. Garr at the Department of Family Medicine, Medical University of South Carolina, 171 Ashley Avenue, Charleston, SC 29425.

THE SHIFT FROM PRIMARY CARE TO COPC

One of the premises upon which this new health center was developed was that it would be more than simply an excellent primary care practice. In particular, a primary care practice sees its purpose as meeting the needs of those who come to the office. A COPC practice views its role as not simply limiting service to those who seek care. Rather, those working in a COPC practice try to identify people both in the practice and in the community who may not be receiving needed health services. Once these people have been identified, COPC providers work with others to initiate outreach efforts designed to address unmet needs. Thus, COPC implies a significant advocacy role for a health care practice and its providers. The task force and the board both wanted the new center to utilize and teach the COPC approach.

There are four steps required to identify and address the major health problems of a community using the COPC approach. These steps are: (1) define and characterize the community, (2) identify community health problems utilizing input and guidance from community representatives, (3) develop new programs and services based on the high priority health problems, and (4) monitor the impact of the COPC program.

In the case of the health needs assessment of Hampton County, areas identified as benefitting from immediate attention were the high prevalence of cardiovascular disease and inadequate access to care for pregnant women and young children. The task force and board endorsed the creation of the new clinical practice which would have as its mission the provision of excellent primary care as well as the development of programs and services to meet the priority health problems in the county. The board was particularly interested in creating a practice that would demonstrate for students and residents that providing COPC services and practicing in a rural community can be rewarding, energizing, and fun. The board wanted to provide a model for clinical

practice that health professionals could emulate in the future.

CREATION OF THE NEW PRACTICE

The Board of Directors of the new foundation sought to identify space for the new clinical practice as well as to recruit staff. The Hampton General Hospital in Varnville, South Carolina wanted to make space available for this clinical practice. A wing of the hospital was not being fully utilized and could be renovated to accommodate the new facility. As renovations were commencing, the board contracted with the Low Country AHEC administrator to begin developing the administrative infrastructure for the practice. He wrote job descriptions, developed an organizational chart, met with local community leaders and media representatives, and coordinated the many tasks required to establish the new practice.

A large number of people devoted significant amounts of energy and time to the task of developing the practice. These people shared the common goal of developing an outstanding rural primary care education center that would help meet the health care needs in Hampton County. The board recruited Neal Shealy, M. D., to be the medical director for the new facility. His recruitment was aided by a rural practice incentive grant from the state-supported Rural Physician Program. Prior to relocating to Hampton County, he had worked for nine years in a rural community in North Carolina. Dr. Shealy concurred with the goals and directions of the new program, and he agreed to relocate to Hampton County in time to open the new practice in March 1991.

Once the medical director was identified, the administrator proceeded to identify the other staff for the facility. When the office opened in March 1991, the staff included the medical director, a part-time family nurse practitioner, one registered nurse, and two office staff. A full-time physician's assistant joined the practice in June, 1991.

The new practice has been very successful.

Hampton County residents have responded very positively to the presence of this new practice. Within weeks of opening the doors, the practice was almost filled to capacity. Due to the fact that the practice is located in a health underserved area, it was known from the outset that it would be important to monitor the number of patients accepted so as not to overwhelm the staff and compromise the quality of clinical care and teaching provided. Because the practice is committed to the COPC principles, the office is closed every Wednesday afternoon. This time is used by the staff to provide services in the community that otherwise would be difficult to provide. Examples of some of these activities have been the following: (1) first aid classes and basic life support courses for county residents (a response to residents' concerns about the high incidence of myocardial infarctions and the delay encountered in providing ambulance services to remote parts of the county), (2) educational talks, screening programs, and physical examinations provided to children in local schools, and (3) health education talks to employees in those industries.

A number of nursing students, family practice residents, and medical students have worked in the practice and community since May, 1991. Feedback from these learners has been consistently positive. Many have been so enthusiastic that they advocated including the Hampton experience as a required part of their program's curriculum. They cite staff morale, the community-oriented nature of the practice, the pleasant community setting, and the meaningful clinical experiences as some of the positive features of their work in the health care center.

FINANCING CLINICAL AND EDUCATIONAL SERVICES

The initial start-up costs to establish the new health care center were quite reasonable. The funds from the state of South Carolina were used to complete the renovations and to acquire the furniture and supplies for the office. Funds from the HETC grant and from

the Department of Family Medicine helped pay the salaries of the providers during the start-up first year of the practice. The facility included a patient reception area, four administrative/provider offices, and six rooms for patient care. Computer terminals were installed in each examining room and one additional terminal was placed in each of the two administrative offices. Eventually it is anticipated that the practice will convert to a paperless medical office with exclusive use of the computer system for medical records and patient billing.

In a Health Professional Shortage Area (HPSA), the Health Care Center qualified as a Rural Health Clinic to receive a more favorable reimbursement rate when providing care to patients insured through Medicare and Medicaid. The Rural Health Clinics Act was federal legislation enacted to help improve the likelihood that clinical practices in underserved rural areas would survive. Rural Health Clinic designation is provided if a practice is in an underserved area, provides primary care, and utilize the services of mid-level health providers.

PLANS FOR THE FUTURE

The demand for services and the positive reception by county residents has resulted in plans to add a satellite facility in a community 13 miles from Varnville. This new facility will be located close to a low income population which has traditionally had difficulty obtaining access to health care services. The initial emphasis in this satellite will be on the provision of maternal and child health care services given the need for these services in that community. The eventual plans are to expand services to a full range of care and to link the satellite center closely to the base practice in Varnville. In addition, more extensive community projects and programs are planned. These programs will seek to address needs within the community as well as provide educational models for students and residents. The Varnville practice is equipped with a computer system which will permit close

tracking of care provided to patients registered in the practice. This computer system is identical to the one in use in the Department of Family Medicine at the Medical University of South Carolina. The computer system will provide the practice with large amounts of data about its patients and the opportunity to develop and test new programs and services for patients. Full implementation of these proposed plans will proceed most efficiently once additional health providers have been recruited for the practice. Given the attractive setting, the community-oriented emphases within the practice and the educational mission, it is anticipated that additional excellent health care providers will be recruited to join this new health program.

CONCLUSION

The success of the Hampton County project is due in large part to the energetic, cooperative commitment of a large number of people who all shared a common vision. This vision was to provide excellent community-oriented care to the citizens in Hampton County, South Carolina and to teach students and residents about the joy and satisfaction derived from rural practice. An enormous amount of progress has been made in a relatively short period of time. This progress is due to the

energy and dedication shown by the many people who participated in the development of this new health program.

The need is great for health services in the state of South Carolina, especially in rural areas. As this new practice grows and develops, and as more health profession students and family practice residents have positive experiences in rural areas like Hampton County, more health professionals will seek to work in areas like Hampton County. The challenges remain great and many unmet needs still exist. With continued energetic commitment, it is anticipated that we will see an expansion of health care programs and services in Hampton County and in other areas of South Carolina. □

REFERENCES

1. Health Education and Training Center, grant number 1 D39 PE00002-01: Department of Health and Human Services, Public Health Service, HRSA, 1990-93.
2. Kark SL. The practice of community-oriented primary health care. New York: Appleton-Century-Crofts, 1981.
3. Nutting, PA, ed. Community-oriented primary care: from principle to practice. Albuquerque: University of New Mexico Press, 1990.
4. Nutting PA, Garr DR. Community-oriented primary care. Monograph, Edition No 235, Home Study Self-Assessment program. Kansas City, MO: American Academy of Family Physicians, September, 1989.

THE WINNSBORO RURAL PRIMARY CARE EDUCATION PROJECT UNIVERSITY OF SOUTH CAROLINA SCHOOL OF MEDICINE*

CHARLES T. MCELMURRAY, M. D.**

D. LINDSIE CONE, M. D.

SANDRA K. KAMMERMAN

STANLEY D. FOWLER, PH. D.

In recent years there has been a disturbing trend for senior medical students to choose residency programs in areas other than primary care specialties. This comes at a time when the need for primary care physicians is ever increasing. Additionally, those graduating from primary care residencies are often recruited to suburban group practices with ideal patient populations. Meanwhile, the health care of rural and inner city America suffers from an increasing manpower shortage.

While the University of South Carolina School of Medicine has an excellent record of producing primary care physicians, there remains a critical shortage of primary health care providers in the state, especially in rural areas. A new project, titled The Winnsboro Rural Primary Care Education Project, has been developed by the University of South Carolina to respond to this need.

The Winnsboro Primary Care Education Project is a joint venture of the USC School of Medicine, College of Nursing, and School of Public Health with the South Carolina Area Health Education Consortium (S. C.

AHEC) and the local community in Fairfield County (Community Health Foundation of Fairfield County). The project establishes a model primary care practice and education center in the rural community of Winnsboro, located 30 miles north of Columbia. Although a viable community hospital is located in Winnsboro, Fairfield County is a medically underserved area with one of the highest overall death rates in the state. Fairfield County is also one of the most rural counties of South Carolina. The proximity to USC, the health care needs, and the typical rural characteristics make this an ideal project. The enthusiastic reception of the concept by community lay and health profession leaders was critical in the decision. Lindsie Cone, M. D., was charged with developing the School of Medicine portion of the medical curriculum in primary care. Project Director for the College of Nursing is Sara Fuller, Ph.D., and, for the School of Public Health is Gale Coston, Ph.D. While demographic, morbidity, and mortality investigations were pursued to delineate the health care problems of Fairfield County, a search for personnel and clinic facilities was undertaken. The search initially demonstrated a paucity of candidates willing to locate in a rural setting and a lack of capital to underwrite a rural health care facility, further validating the need for such a project.

The project was initiated by seed grants from the Fullerton Foundation and a Health

*Supported in part by funds from Health Education and Training Center grant #1 D39 00002-01: Department of Health and Human Services, Public Health Service, HRSA, 1990-93.

**Address correspondence to Dr. McElmurray at the Department of Family Medicine, University of South Carolina, Columbia, SC 29208. Dr. Cone, Ms. Kammerman, and Dr. Fowler are also from the University of South Carolina School of Medicine, Columbia.

Education and Training Center (HETC) grant from the U. S. Public Health Service. Other funds have been received from Richland Memorial Hospital, the South Carolina Rural Physician Program and the Duke Endowment. These resources allowed the project to hire personnel and start a model practice. A health science education specialist with experience in directing wellness programs, patient education, and inservice projects joined the program in January 1992 as health educator. The medical director, Dr. Charles McElmurray, who is a native South Carolinian, was recruited from a rural family practice in Bluefield, Virginia.

Throughout the prolonged planning phase of the project, a cooperative interaction between Fairfield Memorial Hospital, its medical staff, the community leaders of Winnsboro, the University of South Carolina, and the Richland Family Practice Residency program has been in progress. This dialogue provides a solid foundation for the continued cooperation that will be crucial for the success of this project.

The heart of the project is a model private practice providing a full scope of medical care for the community, i.e., inpatient, outpatient, obstetrics, pediatrics, medicine, and minor surgery. A full-time family physician and a nurse practitioner permanently staff the practice and serve as USC faculty members. Other residents and faculty members from a variety of medical specialties and health care disciplines rotate through the facility to broaden the clinical experience for the students. New applications of communication and computer technologies facilitate interaction between tertiary facilities and this rural site. However, even with the numerous resource personnel, the project functions as a solo practice. Since the majority of rural practices throughout the nation are solo, this demonstrates the need for teamwork with the local medical community for call coverage and educational stimulation. In addition, it demonstrates the cooperation with local health-related agencies necessary to provide

the ancillary services patients often require. This teamwork and interaction with other professionals should provide the opportunity for a balanced life style, in which a satisfying medical practice is combined with a rewarding family and social life

Though students from multiple health care disciplines and family practice residents may spend time at the project site, the focus of educational efforts is on third-year medical students in the School of Medicine, postgraduate nurse practitioner students in the College of Nursing, Pharm. D. candidates in the College of Pharmacy, and undergraduate students in Public Health and Social Work. As medical students and nurse practitioner students rotate through the project, they have the opportunity to interact with and treat patients in office and hospital settings. All interactions are monitored and students receive feedback through direct supervision or delayed video review. They also have the opportunity to interact with computer-simulated patients in the Learning Resource Center, under the supervision of the full-time health educator. The education specialist assists these students in completing a self-directed curriculum, including seminars and review of the current literature on rural health care issues, providing an opportunity for interdisciplinary discussions and an understanding of the roles of various health professions.

The Learning Resource Center provides the necessary resources and guidance to expand the students' knowledge and communication skills. Faculty members and students serve as resource personnel to work with individuals and groups in trying to change health-related behaviors in the community. This effort involves students in the community and provides a forum for the implementation of newly acquired skills. Local service organizations have already expressed interest in having students provide some programs. Local industries have also expressed an interest in the implementation of wellness education in their facilities. Community agencies have given input and seek cooperation in the possi-

ble development of health-related programs, such as adult day care, as a means of keeping the elderly in family settings rather than in nursing homes. Since preventive and proactive health care is a major emphasis of community interaction, it is hoped that the overall health of the county will improve, thus providing a body of data for research on effectiveness and fiscal feasibility of preventive measures.

The students have the opportunity to learn some of the practical aspects of practice management and to be exposed to the special fiscal concerns of rural practice. They are also assigned projects evaluating cost effectiveness of procedures and are able to view implementation of various health care regulations. The goal is for each student to develop a vision for providing quality health care

while helping contain medical costs through preventive health care and education.

In a time of increasing health care costs, the demand for high quality and cost-effective primary health care providers continues to rise. Through health care delivery, education, and ongoing research in health care delivery, education, and ongoing research in health care provision it is hoped that the Winnsboro Rural Primary Care Education Project will improve the health of those individuals and families residing in medically underserved areas. This innovative, interdisciplinary program encourages students in the health profession to choose primary care, particularly in rural and other medically underserved areas. Additionally, it demonstrates the need for teamwork between various health care providers in the rural setting. □

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WILLIAMSTON – A MODEL RURAL PRACTICE FOR RESIDENT EDUCATION*

ELIZABETH G. BAXLEY, M. D.**

WILLIAM T. MANSON, III

JAMES G. HALFORD, JR., M. D.

FREDERIC JONES, M. D.

BACKGROUND

In the fall of 1989, faculty from the Anderson Family Practice Residency Program and administrators from Anderson Memorial Hospital met together to discuss the feasibility of opening a satellite family medicine office. Anderson Hospital had been concerned for some time about meeting the health care needs of the people of northern Anderson County. It had operated, with the help of the residency, an afternoon walk-in clinic at the old Williamston Hospital. Dr. Dwight Smith, who had practiced general medicine in Williamston for 42 years, was cutting back on his practice volume, and, at the same time, the town and surrounding areas were growing in population size. An opportunity was available for a new practitioner, and yet, no one had stepped forward to fill the anticipated gap.

About this same time, the residency program was reexamining its ambulatory teaching experiences. In residency programs across this state and the nation, faculty were frustrated by seeing so many of their graduates opt for non-traditional practice settings, such as emergency departments, industry, or urgent care facilities. An attempt was made to examine the reasons for this movement, with emphasis on the reasons why physicians seemed to avoid rural sites for practice.

BUILDING A NEW PRACTICE

Out of these dual objectives came the plans for Foothills Family Medicine. Plans were drawn for a new office to be located in the town of Williamston. While the town itself has a population of approximately 4,000 people, the practice would serve a catchment area of nearly 9,000 Anderson County residents. One other family physician, a 1985 graduate of the Anderson residency program, already practiced in this area, yielding a ratio of one full-time physician for every 4,500 people. Anderson Memorial Hospital provided the financial backing and administrative support to plan and construct a 4,000 square foot building with six examination rooms, surgery suite, three offices, x-ray, lab, and a support staff of one receptionist, one business manager, and two nurses.

The community response to the opening of Foothills in March 1991 has been very positive. In the first 15 months the practice has accumulated over 1,850 active charts and registers approximately 500 patient visits per month. Referrals come from the local general practitioner as he reduced his patient care time, the school district, the Anderson County Health Department and industry from this region of the county. A contract with DHEC's Center for Health Promotion has allowed expansion of funding for cancer screening services for women, with Foothills being the first contract signed in South Carolina under the Best Chance Network program. Demand for practice growth, coupled with a desire to allow adequate time for teaching, recently led

*From the Anderson Family Practice Center, Anderson Memorial Hospital, Anderson.

**Address correspondence to Dr. Baxley at the Anderson Family Practice Center, 600 North Fant at Calhoun, Anderson, SC 29621. All four authors are from the Anderson Memorial Hospital, Anderson.

to the addition of another family physician at the Foothills office. A 1992 graduate of the Anderson program began private practice at this site in mid-July, allowing for the expansion in the number of available patient appointment times.

RURAL EDUCATION FOR FAMILY MEDICINE RESIDENTS

Foothills is the site of a required four-week rotation for residents in their last 18 months of training. The goal of this block rotation is to provide the resident with first-hand experience in a "model" community practice. While at the satellite, residents have primary responsibility for evaluation and treatment of patients seen, and have the benefit of one-on-one teaching from a family practice faculty member. Additionally, a teaching conference is held at the end of each day to discuss cases seen, with an emphasis on health maintenance and preventive medicine.

Educationally, the satellite offers some exciting, innovative curricular components. During their satellite rotation, residents experience what a two-person partnership would feel like, and see a volume of patients comparable to private practice. Other experiential methods of teaching practice management are employed, including involvement of the resident in day-to-day decision making about items related to office operations, and participation in staff meetings. Additionally residents are videotaped doing a new employee interview and corrective action interview with a simulated employee. This videotape is critiqued by a faculty member, allowing discussion about proper interview technique and what one should look for when hiring office personnel.

Partnerships with local industry allow for teaching of occupational medicine, including time spent learning about occupational lung disease at a local steam plant. A nearby inpatient chemical dependency treatment program offers residents an opportunity to expand their curriculum in the recognition and treat-

ment of substance abuse disorders, with emphasis on aftercare and the involvement of the family physician in the care of the chemically dependent person during recovery.

An example of how family physicians and family therapists work cooperatively is modeled at the satellite. Two family therapists share in a weekly clinic, during which time the resident can observe and practice interviewing skills, crisis management and the indications for referral to mental health professionals. During the rotation, the resident is also involved in a self-designed community-oriented primary care project.

EDUCATION FOR THIRD-YEAR MEDICAL STUDENTS

Foothills Family Medicine has been a highly rated site for medical student teaching by MUSC students in their third year family medicine rotation. With direct teaching by a family practice attending and an upper-level resident physician, students are given autonomy and are expected to be actively involved in the initial assessment and treatment plan of the patients they see. They observe patient interaction role modeling from an experienced practitioner and see the challenges and rewards of caring for entire families in a private office setting, without competition from other students and residents. During this part of their rotation the students have also been involved in community activities such as giving health talks at local elementary and high schools.

CONCLUSION

Foothills Family Medicine has been an initially successful endeavor which resulted from a cooperative partnership between a private not-for-profit hospital and a community academic training program. The long term success of this and other rural satellite initiatives will be realized as South Carolina sees an increase in the numbers of primary care physicians locating in medically underserved areas. □

PRACTICE-BASED EDUCATION FOR FAMILY MEDICINE RESIDENTS IN PROSPERITY, ABBEVILLE, AND NINETY-SIX

STONEY A. ABERCROMBIE, M. D.*

S. LARRY HOLMES, M. D.

OSCAR LOVELACE, M. D.

BACKGROUND

Since 1969, 50 percent of graduates of Family Practice Residency Programs have settled in communities with populations of less than 25,000. This wonderful statistic fails to calm the anxieties of many rural South Carolinians who lack reasonable access to a physician. Rural South Carolina is in desperate need of physicians. Family physicians seems to be the best qualified to meet this need. The question remains, "How can we convince young Family Practitioners to practice in rural South Carolina?" There seem to be several answers. First, we must recruit people who would feel comfortable living in rural communities – usually students who grew up in a rural community.

In medical school and residency training, academic medicine must foster, not negate, the rural physician role. Medical school experiences with rural physicians have proven quite beneficial. However, a 1989 AAFP survey indicated that only 16 percent of accredited Family Practice programs had a required rural medical rotation. We scratch our heads as to where the problem may lie?

Self Memorial Hospital is a 397-bed regional hospital located in beautiful Greenwood, South Carolina, a town of 25,000. The hospital provides a residency training program in Family Medicine. By the standards of many, Greenwood would be considered rural. So why in this setting would the program

seek to send residents elsewhere for a rural experience? The senior author, as Director of Medical Education and Program Director for this residency program, feels it is almost impossible to simulate an office-based rural practice in a residency program. Many have tried and many have failed. To get a true experience of life as a rural physician requires a direct involvement in a quality rural community practice.

A 1989 AAFP survey asked, "What extra skills do you believe are required to successfully practice rural medicine?" The seven consensus answers were: (1) enhanced OB-GYN training, (2) advanced trauma emergency training, (3) critical care medicine, (4) surgery (pre-op, post-op, and office procedures), (5) orthopedics, (6) practice management, and (7) personal rural experience for the family practice resident.

Based upon the great need in South Carolina and the above information, the Family Practice residency program at Self Memorial Hospital has restructured its curriculum to enhance training in rural medicine. We are proud of the fact that 78 percent of our graduates practice in communities with a population of less than 30,000. Since we are in the most rural of all seven Family Practice residency sites in South Carolina, we feel the urgency to improve on this already excellent statistic.

NEW RURAL ROTATIONS FOR TRAINING OF RESIDENTS

The program, therefore, initiated a required rotation in rural medicine. Presently the third-year residents spend one month split between

*Address correspondence to Dr. Abercrombie at the Montgomery Center for Family Medicine, Greenwood Memorial Hospital, 160 Academy Avenue, Greenwood, SC 29646. Drs. Holmes and Lovelace are in private practice in Abbeville and Prosperity, respectively.

two rural communities.

To experience a rural practice with obstetrics, all residents spend two weeks in Prosperity, South Carolina – a Newberry County town of approximately 1,116 people.

Because 70 percent of all obstetrical care providers in rural areas of America are family physicians, it is important for our residents to experience a rural practice which includes obstetrical care. Lovelace Family Medical Center in Prosperity, South Carolina is the only obstetrical care provider in Newberry County and delivers approximately 250 babies a year. Drs. Oscar Lovelace, Michael Emlet, and Corey Hunt have made family centered obstetrical care a priority in their practice. While the majority of their patients are indigent, they have been able to provide local care for these women for whom transportation is often a major problem. These physicians are also capable of primary obstetrical ultrasound scanning and provide this service in their office.

Next year, each of these physicians will be attending a three-month fellowship in operative obstetrics at the Medical University of South Carolina, which was arranged after Newberry County Memorial Hospital provided a stipend to allow them to pursue this additional training. In Prosperity, the residents see a modern, comprehensive family practice setting providing obstetrical care and making a difference in Newberry County. This is especially important as South Carolina has the highest infant mortality rate of any state in the nation. According to the American College of Obstetrics and Gynecology, as of January 1992 the rate of infant deaths in South Carolina is 12.8 neonatal deaths per 1,000 live births.

To experience rural Family Practice without obstetrics, residents choose a two-week rotation with either Ninety-Six Family Practice (Dr. Dan Robinson, a graduate of our program) or Abbeville Family Practice (Dr. Larry Holmes, a graduate of our program; and Drs. Todd and Kolb). Both of these practices allow a hands-on experience for resi-

dents in a friendly, balanced, and practical setting. The Prosperity and Abbeville physicians use nearby small hospitals while the Ninety-Six Family Practice utilizes the larger Self Memorial Hospital.

EDUCATIONAL GOALS FOR RURAL ROTATIONS

Goals for these rotations are that residents will:

1. Experience the true flavor of being a rural M. D.
2. See role models on how to balance their professional/personal life.
3. Realize the value of their ability to use their diagnostic skills.
4. Experience self-assuredness in the context of awareness of their limitations.
5. Increase the skill levels learned in residency, and
6. Be excited and encouraged to consider rural practice as a strong option for themselves.

Experience the true flavor of being a rural M.D. The residents are exposed to the “fishbowl” concept of being a well-known physician in a small town. Initially this can be frightening as lack of privacy occurs. They learn the stress placed upon a physician and his/her family in rural communities. With these well-adjusted, balanced groups, the residents learn the joys of rural medicine (fresh fruits and vegetables, canned goods, etc.), and they are exposed to rural physicians who are looked upon as community leaders. The rural doctor is expected to be involved in community and preventive health, school health (often as team doctor), and in local civic, political, and religious organizations.

See role models on how to balance their professional/personal life. As seen above, the rural physician is a community person. It can seem that everyone wants a piece of him/her. Therefore, the rural physician must set limits to protect personal and family time. The three groups chosen consider this balance

to be a high priority. Exposure to the faster pace of private practice, if controlled, can be intellectually stimulating for the resident.

Realize the value of their ability to use their diagnostic skills. It is exhilarating for a young physician to realize that a diagnosis can be made without the lab or x-ray order being done first. The rural physician must be a generalist who has excellent diagnostic ability. The variety of patient mix and diagnoses provides fertile ground for the development of understanding and diagnostic skills.

Experience self-assuredness in the context of awareness of their limitations. The rural physician must be self-confident in handling a wide variety of undifferentiated patient complaints. Even with excellent problem solving skills and a strong procedural background with an emphasis on behavioral medicine, the rural physician must be quick to ascertain when the problem is greater than his/her capabilities. A reliable consultative system is essential.

Increase the skill levels learned in residency. Many residents in tertiary care facilities have only the experience of receiving out of town patients and develop the "LMD" idea of the small town doctor. The rural rotation helps residents appreciate the problems and complexity of the primary care setting and to

adopt a pattern for continued medical education in order to maintain and update skills and to learn new procedures. Practice management skills are also developed as the resident is able to see the time and commitment required to manage a practice. The rural physician must be a good business person. Two of the three groups serve as Agromedicine Consultants from their counties and, therefore, offer a view of needed special skills in this area.

Be excited and encouraged to consider rural practice as a strong option. The need is certainly there! The rewards can be unbelievable! To get young physicians to practice in rural South Carolina, we must provide them with a positive and significant exposure to the rural medical setting. The role models chosen for them are so important. If residents see burned out physicians who have failed to manage their professional/personal lives, they may be discouraged from considering rural medicine.

CONCLUSION

The Family Practice Program at Self Memorial Hospital and the three groups who volunteer to share their practices are mutually committed to rural education for residents. This practice based experience in rural medicine is a positive inducement for consideration of such a practice by our residents. □

PHYSICIAN RECRUITMENT AND RETENTION: AHEC'S ROLE

WILLIAM H. HESTER, M. D.*
JOHN R. WATKINS

BACKGROUND

In 1971, South Carolina ranked 44th in the nation in physician population. Our state had been steadily acknowledged as a part of the rapidly growing "sunbelt" for new industry and also as a prime location for retirement. For these and other reasons the Medical University of South Carolina (MUSC) sought ways to increase the state's physician population. One result was in 1972 when the Department of Health, Education and Welfare provided grant money to MUSC as one of 11 grantees for the development of Area Health Education Centers.

Even though the development of this University without Walls, as it has been called, was for educational opportunities, it was also largely a recruitment program. Young physicians training in community teaching hospitals became familiar with their geographic regions, which became their choice for practice locations. An additional feature of this training in sites distant from the traditional medical center was the young physician's increased knowledge of the resources available to them in practice.

Prospects for more favorable physician to patient ratio were improving in South Carolina beginning with the further development of the Family Practice Residency System in the late 70s and early 80s. The Family Practice Residency System is the largest single program of the S. C. AHEC.

NEW RECRUITMENT AND RETENTION PROGRAM

In order to help physicians completing their

training to identify practice opportunities, a recruitment and retention program was developed in AHEC central office in 1984. This program was seen as an effort to enhance the quality of health care outside the urban areas of South Carolina. The residency programs were producing increasing numbers of physicians which led to urban saturation. The recruitment and retention program developed a data base to provide information to all training sites, state agencies, and state associations about rural practice opportunities in addition to urban opportunities.

This program has been very successful! Today there are over 800 practice openings listed in the recruitment database. Residents can access this information from their training site and get more details from the AHEC central office for specific sites of interest.

Started in 1986, the Practice Opportunities Fair has become an annual event. For two days in late summer an opportunity is afforded to those physicians, hospitals and other agencies to meet with residents beginning their practice location search. About 100 potential opportunities are displayed with plenty of information dispersed to over 100 residents and spouses. A unique blend of "hunters" and "seekers" occurs in a low-pressure atmosphere. Several unions of new practitioners and practices occur each year.

Given the rural nature of our state many efforts seek to attract medical students to Family Medicine, General Internal Medicine and Pediatrics, which are specialists who are more likely to meet the needs in underserved areas. A new program targeting Family Medicine is the Family Practice Day.

Family Practice Day occurs simultaneously with the Practice Opportunities Fair. Students from our two state medical schools and

*Address correspondence to Dr. Hester at McLeod Family Medicine, 555 East Cheves Street, Florence, SC 29506. Mr. Watkins is from the administrative office of the S. C. AHEC at MUSC, Charleston.

schools from North Carolina and Georgia are invited to attend. Panels composed of residents, program directors and faculty from each of the seven statewide programs provide information about the specialty, how to decide on a specialty and the interview process. Only three years old, this program has already provided a forum for discussion to 223 students and 100 spouses with 48 residency programs participating.

All of these programs and efforts to recruit physicians into our state have limiting features. Even though a potential practitioner likes a community, economically he/she may not be able to survive. Start-up costs, moving expenses and slow cash flow may make the dream fade rapidly. Through the combined efforts of AHEC and various state agencies, the South Carolina State Legislature has developed several programs to overcome this obstacle.

SECURING INCREASED FINANCIAL SUPPORT

Through collaboration between AHEC, the S. C. Department of Health and Environmental Control, and the South Carolina Primary Care Association, a federal grant was obtained for loan repayment. This provides funds for primary care providers who elect to practice in underserved areas of South Carolina. The funds are limited to repayment of loans used to pay educational expenses. To date, nearly \$1 million have been awarded to be used in this manner.

A State Incentive Program for Practice in Rural South Carolina was established four years ago and has assisted 78 physicians and other health care professionals to make the transition into rural practice. This includes 57 Family Physicians, seven Pediatricians, nine Internists, two Obstetricians, and three Nurse Practitioners. These two programs are governed by a legislatively appointed board, the Rural Physician Board. The board consists of the following members: Sam Causey, Chair-

man; Lathran Woodard, PCA; William A. Prince, SCHA; Aileen Trainer, CHE; J. O'Neal Humphries, M. D., USC; William Mahon, SCMA; and Doug Bryant, DHEC.

These two programs have had immediate impact on the population of physicians and health care providers in our rural communities. The four-year incentive program is designed to recruit practitioners who will stay in those communities.

While it is important to recruit physicians to South Carolina, and particularly to the rural areas, retention is of equal importance. Much will be lost if we are unable to help our colleagues be satisfied with their practice and their personal lives.

EMPHASIS ON RETENTION

The Family Medicine Residency Program at McLeod Regional Hospital is exploring further ways to keep rural physicians in rural practice by sponsoring a two-day retreat that brings together rural physicians and residents who are interested in, but possibly afraid to try, rural practice. This provides a forum to identify the needs of the practitioner who is already "there."

Workshop sessions on stress management and financial management have been particularly popular with the rural physicians and residents. A session on avoiding burnout has also been a highlight of the workshops.

In addition, residents were able to get a candid review of what it is like to practice in these communities. Spouses of both groups are involved throughout the meeting and add invaluable feedback and support.

It is hoped this program can be enlarged in future years to involve more of our practitioners and residents. It is our firm belief that this temporary union between these two groups will not only help the rural practitioner through difficult times but also make the resident who leans toward rural practice have more positive feelings about it. □

Editorials

Guest editorials reflect the opinions of the authors and do not necessarily reflect the policy of the Editorial Board and the SCMA Board of Trustees.

CHANGING MEDICAL EDUCATION FOR TOMORROW'S PRACTICE

The practice of medicine in the year 2000 and the year 2010 is going to be so dramatically different from what we have known for the past 50 years that many of us will not recognize it.

These changes will not only be in the scientific area, but also in the methods of delivering care and doing business.

Computers will be the driving force to demand many of the changes, but other changes will develop because of societal pressures and reimbursement methods.

The computer will allow for paperless offices, individual patient data acquisition, easy access to the literature, use of decision-making programs, and access to enormous databases about illnesses, drugs, alternative treatments, etc.

The physician of the 21st century will not expect the same work schedule as the physician of the 20th century. Regular hours with scheduled times on and off duty will be the standard of practice. The public will also expect a different style of care, insisting that they be involved in the decision-making and treatment selection. They will need to be equipped to be involved in these decisions. The financing of health care will determine the structure of the practice of medicine to a greater and greater extent. It is predicted that the complexities of reimbursement will demand that large groups band together. In most circumstances, the physicians will have an employee relationship with the large

groups or corporate entities. The groups or corporate entities may be bands of physicians, for-profit corporations out of Atlanta (or Charlotte), medical schools, or hospitals.

Are the educational structures in our two medical schools and nine residency training sites properly arranged to prepare our graduates for the dramatic changes? As of 1992 the answer is "not adequately." What must we change to better prepare our graduates for the "new practice" of the 21st century?

As we approach the answers to these questions, can we also design changes in the educational system that will address the greatest health care needs in South Carolina, especially the inadequate health care in the many rural areas of this state? Should computers be in every rural physician's office? Should health care be delivered in rural areas through large systems using a wide range of health care providers? Should all rural physicians be a part of one or more networks?

The efforts described in this special issue are a beginning for those of us in medical education to address these problems, issues, and questions in order properly prepare the physicians and other health professionals for the new patterns of practice in the 21st century.

O'Neal Humphries, M. D., Dean
USC School of Medicine
Columbia, SC 29208

WHY SHOULD I BELONG?

Quite often the leadership of organizations get asked – “Why should I belong to your group?” Maybe it is a valid question, maybe not. Usually those on the inside of the organization have certain beliefs and reasons for belonging. But sometimes it may be difficult for that “insider” to verbalize the reasons to the “outsider.”

Medical organizations such as our state and national organization give us, the member, a forum for idea sharing, commiserating, and for putting forth to whomever what our needs and proposals are. Our organization represents our collective view to the public. It provides information for other organizations and governmental agencies that impact our practice of medicine.

We need to think about all of these and other reasons in order to spark interest in the “outsider” to become an “insider.” Young physicians especially like to feel needed. They are needed not only by their families and patients but also by organized medicine. We “insiders” must constantly replenish the vitality of our organization with new blood, new ideas, and new energy.

Young physicians aren’t given many reasons in medical school to belong to anything.

There is strength in numbers; there is comfort in numbers. We all feel more secure in our daily practice and our daily lives where we know that our organizations in medicine are working for us; are representing what we feel; are speaking honestly, and directly for us when issues confront us individually and collectively.

Of course there are all of the other benefits of the insurance programs, accreditation for continuing medical education programs, publications, etc.

Why then belong? Your voice can be heard; your views can be expressed; your successes rewarded. Little is required of us who “belong.” You can make your involvement active or passive. However I can promise the more active you are, the greater will be your rewards!

William H. Hester, M. D.
Family Practice Center
McLeod Regional Medical Center
555 E. Cheves Street
Florence, SC 29501

On the Cover:

HISTORY OF THE SOUTH CAROLINA AREA HEALTH EDUCATION CONSORTIUM (S.C. AHEC)

S. C. AHEC is an innovative statewide system blending community health service with the education of health professionals through a cooperative effort by the Medical University of South Carolina, the University of South Carolina, S. C. Community Hospitals, and local, non-profit consortia, that has developed into seven regional AHEC centers, including four free-standing family practice residency programs, and three multiple residency sites.

AHEC's beginning was in 1970, when the MUSC College of Medicine, Richland Memorial Hospital, Greenville General Hospital, and Spartanburg General Hospital developed a consortium to strengthen post-graduate training throughout the state and to provide junior and senior medical student teaching programs in these hospitals. In 1972, the state began funding for medical education, and in 1973, McLeod Memorial Hospital joined the consortium.

The potential impact of the consortium teaching program coupled with the newly formed family practice residencies, allied health training, and other activities became apparent, and the concept of statewide Area Health Education Centers that would offer a spectrum of health education programs was explored. In 1972, the MUSC College of Medicine, under the Deanship of Dr. J. F. A. McManus, applied for and was granted a five-year federal Area Health Education Center Contract. Three additional years of federal funding were added to the initial grant, and the state took over the funding of the AHEC system as the federal funds were phased out.

The AHEC goal was initially to create a statewide network that provides health care education to all primary care providers and serves as a link between the academic health science centers and practicing health care

providers in the local communities, thereby improving the health of all South Carolinians. An additional emphasis was placed on minority recruitment, and in the next few years, the residency programs experienced expansion; Anderson Memorial and Self Memorial Hospitals and three regional AHECs — Catawba Wateree in Lancaster, Upper Savannah AHEC in Greenwood, and Low Country AHEC in Varnville — were added, and South Carolina AHEC became a statewide network.

This led to today's system, which includes Anderson Memorial Hospital, Catawba Wateree Health Education Consortium, Greenville Hospital System, Low Country Health Education Consortium, McLeod Regional Medical Center, Medical University of South Carolina, Richland Memorial Hospital, Self Memorial Hospital, Spartanburg Regional Medical Center, the University of South Carolina, and the Upper Savannah Area Health Education Consortium. The AHEC Central Office is housed at MUSC in Charleston. The Executive Director is an Associate Dean in the College of Medicine and reports to the MUSC Vice President for Academic Affairs. Each director of the statewide education programs is a faculty member in one of the Medical University of South Carolina's five colleges. These faculty and other Central Office staff are employees of MUSC and the State of South Carolina. After various name changes over the years, the Consortium took on "South Carolina AHEC" as its official name in 1987.

The coordination and governance of this complex system requires the right balance of regional autonomy and state control. A system of councils is the mechanism used to accomplish this balance. Discipline specific councils serve as advocates of the disciplines,

while the Center Directors' council, composed of regional AHEC administrators and a Central Office representative, oversees the development of the AHEC State Plan, and formulates recommendations for the next level of governance, the AHEC Deans' Council. The AHEC Deans' Council reviews and develops policy for all areas of AHEC and is composed of the S. C. AHEC Executive Director, Directors of Medical Education at the residency sites, the Family Practice Residency Program Chairman, Deans of Medicine from MUSC and USC, and Associate members from the three AHEC programs without residency programs. This council system of governance has proven effective in meeting the goals of the AHEC system.

Featured on the cover of this special edition on the S. C. AHEC is Dr. J. F. A. McManus

who, during his deanship at MUSC, provided the impetus for the establishment of the S. C. AHEC and served as its first director. Dr. McManus was a Canadian and earned his M.D. degree from Queen's University at Kingston, Ontario. He studied pathology at Johns Hopkins, Cornell, and Oxford and was well known nationwide for his research and writings on tissue and cell structures of the major organs.

He served as Dean of the College of Medicine at MUSC from 1970 to 1974, when he resigned to devote full time to teaching and research. He died on March 5, 1980.

Ann Hagins, S. C. AHEC
Medical University of SC
171 Ashley Avenue
Charleston, SC 29425

Letters to the Editor

MEDICAL AUXILIARY APPRECIATED

To The Editor:

The tireless efforts of the South Carolina Medical Association Auxiliary are always cause for celebration here at the Medical University of South Carolina. We do not always properly let this quietly effective group know how much they mean to us. Not only do these medical spouses engage in health education projects, legislative updates, support to physicians and their families, but also energetic and highly successful fund-raising efforts. The AMA/ERF Committee has, over the years, consistently raised

significant monies for emergency needs of medical students as well as a variety of projects in the College of Medicine. We are grateful!

We salute the members of the South Carolina Medical Auxiliary and extend to them our deepest appreciation for their caring and loyal support.

Layton McCurdy, M. D.
Vice President for Medical Affairs
and Dean
Medical University of South Carolina
171 Ashley Avenue
Charleston, SC 29425-2201



Auxiliary Page

WE KNOW WHAT WE CAN DO!

The words of the late President John F. Kennedy, "Ask not what your country can do for you, but what you can do for your country," have a special meaning for all of us who are involved in practicing the Art of Medicine. Anyone who is not intimately involved in medicine cannot truly understand what are the day-to-day joys and disappointments. The Legislative Affairs Committee is working to answer the question, "What can we do for our country?" The Legislative Affairs Committee feels its mission is to be ambassadors of good will and educators. The committee hopes to meet these objectives this year and has set the following seven goals: (1) 100 percent medical society and auxiliary membership registered to vote; (2) provide auxiliary membership with information about local representatives which they can include in their yearbooks or newsletters; (3) encourage the use of our lobbyists to address local auxiliary meetings; (4) provide a legislative workshop for auxiliary members; (5) provide information to county auxiliaries to promote knowledgeable communication between auxiliaries and their legislators; (6) increase auxiliary membership in SOCPAC by 50 percent; and (7) plan a Legislative Day at the Capitol for 1993 to meet with the new members of the general assembly.

We on the committee have been working this summer to provide the local auxiliaries with the information they need to start meeting many of our goals. On September 9, 1992, in Columbia, a workshop will be given on "How the State Legislature Works." Our speakers are The Honorable Nick A. Theodore, Lieutenant Governor, The Honorable Harry M. Hallman, Jr., House of Representatives, Mr. Moses Clarkson, lobbyist, and Mr. William F. Mahon, SCMA Executive Vice President.

By working closely with our lobbyists, we hope to keep the county auxiliaries informed on important medical issues throughout the year. As mentioned above, we also plan a Legislative Day at the Capitol for 1993 so that we can meet our new elected representative.

Medical association and auxiliary involvement in legislative affairs is extremely important today with the increase in government involvement in medicine. How can legislators understand the complex art of medicine which they are attempting to regulate unless we educate them? We can do this by keeping abreast of medical issues, communicating our thoughts and ideas to our representatives, and voting for those individuals who best represent our interests.

The Legislative Affairs Committee is committed to assisting the medical community to do this. We **know** what we can do for our country!

M. Alexis Alia, Legislative Chairman
Skippy Adkins, Legislative Co-Chairman

YOCON® YOHIMBINE HCl

Description: Yohimbine is a 3a-15a-20B-17a-hydroxy Yohimbine-16a-carboxylic acid methyl ester. The alkaloid is found in Rubaceae and related trees. Also in Rauwolfia Serpentina (L) Benth. Yohimbine is an indolalkylamine alkaloid with chemical similarity to reserpine. It is a crystalline powder, odorless. Each compressed tablet contains (1/12 gr.) 5.4 mg of Yohimbine Hydrochloride.

Action: Yohimbine blocks presynaptic alpha-2 adrenergic receptors. Its action on peripheral blood vessels resembles that of reserpine, though it is weaker and of short duration. Yohimbine's peripheral autonomic nervous system effect is to increase parasympathetic (cholinergic) and decrease sympathetic (adrenergic) activity. It is to be noted that in male sexual performance, erection is linked to cholinergic activity and to alpha-2 adrenergic blockade which may theoretically result in increased penile inflow, decreased penile outflow or both.

Yohimbine exerts a stimulating action on the mood and may increase anxiety. Such actions have not been adequately studied or related to dosage although they appear to require high doses of the drug. Yohimbine has a mild anti-diuretic action, probably via stimulation of hypothalamic centers and release of posterior pituitary hormone.

Reportedly, Yohimbine exerts no significant influence on cardiac stimulation and other effects mediated by B-adrenergic receptors, its effect on blood pressure, if any, would be to lower it; however no adequate studies are at hand to quantitate this effect in terms of Yohimbine dosage.

Indications: Yocon® is indicated as a sympatholytic and mydriatic. It may have activity as an aphrodisiac.

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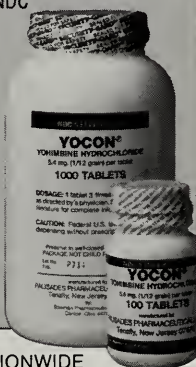
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References:

1. A. Morales et al., New England Journal of Medicine: 1221. November 12, 1981.
2. Goodman, Gilman — The Pharmacological basis of Therapeutics 6th ed., p. 176-188. McMillan December Rev. 1/85.
3. Weekly Urological Clinical letter, 27:2, July 4, 1983.
4. A. Morales et al., The Journal of Urology 128: 45-47, 1982.

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President's Page

MANAGING THE MEDIA

You wake up in the morning, stretch, shower, dress. You sit down at the breakfast table for a cup of coffee and pick up the newspaper. As you turn the page, the headline hits you—"Indigent Suffer as Physician Income Grows."

You scan the article, but nowhere is it mentioned that physician income rose at a lower rate than overall medical care. Noticeably absent in the report are factors driving up the cost of practicing medicine — governmental regulations, liability premiums, administrative costs, etc. You know that physicians make a respectable living, but one must consider the long hours you work, being on call at night and on weekends, and all the years of medical school and training which left you with a large debt when you began practicing. The reporter also fails to mention that many physicians provide charity care in their communities.

You say to yourself "This reporter needs to be educated. Our side of the story should be told." You plan to write a letter to the editor — later. But you work late and before you know it, a few more days have slipped by and the article is forgotten.

A steady diet of these negative articles affects the public's image of physicians and the entire health care profession. The SCMA has realized that too often the public does not hear the voice of physicians. Whether the subject is rising health care costs, access to care, or HIV testing, physicians have an important message to communicate to the public.

Yet, individual physicians have limited time and resources to respond to these negative articles. Recognizing this fact, the SCMA is offering a media response service. We will research the issues and prepare a timely response in an appropriate format to submit to the newspaper.

It is impossible for us to monitor every major newspaper throughout the state on a daily basis. That's why we need your help. We are asking each of you to monitor your daily newspaper and clip any articles that unfairly represent physicians or do not report the physician's side of an important issue. We are most interested in articles written about socioeconomic medical issues such as health care reform, Medicare, etc., rather than articles specific to a certain specialty, disease, or procedure.

You may submit these articles to the SCMA Director of Communications with a cover memo outlining the points of contention and any arguments which should be addressed in the response article. The Director of Communications will receive approval from a member of the PR Committee or the Executive Vice President and will prepare a response based on the timeliness and priority of the issue. The physician submitting the original article will have a chance to review the response before it is submitted to the newspaper. Let's avail ourselves of the resources provided by the SCMA and make ourselves heard.

Articles should be sent to: Suzanne Hellams, Director of Communications, South Carolina Medical Association, P.O. Box 11188, Columbia, SC 29211.

Bartolo M. Barone, M. D.
President

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COMPREHENSIVE GERIATRIC ASSESSMENT*

LESLYE C. PENNYPACKER, M. D.**

W. ALLEN SMITH, PH. D.

Most physicians involved in the care of frail, elderly patients would agree that the task can be overwhelming. Comprehensive Geriatric Assessment (CGA) has emerged as a format through which the complex problems of the elderly may be managed. CGA may be defined as a multidisciplinary diagnostic process intended to determine an elderly patient's medical, psychosocial, and functional capabilities and limitations for the purpose of designing and implementing an individualized plan for long-term treatment and follow-up. While there is a basic format for CGA, its definition allows for innovation and modification to fit a variety of settings.

This article reviews the history of CGA, describes the types of programs that have been developed, and examines the efficacy of each of these models.

HISTORY

Most medical historians trace the development of CGA to Dr. Marjorie Warren. Although initially trained as a surgeon, Dr. Warren found herself in charge of the Poor

Law Infirmary, a 714-bed chronic care ward annexed by West Middlesex Hospital (London) in 1935. At the time of her assignment to this task, most of the patients were elderly, bedridden, and considered "incurable."¹ By systematically grouping patients based on their functional status, modifying the physical environment to accommodate the limitations of the elderly patients, and assembling a multidisciplinary staff to provide care and rehabilitation, Dr. Warren was able to demonstrate remarkable improvement in many patients. Within one year, she was able to discharge over 35 percent of the "incurable" patients to their homes or residential care settings. Based on her success, Dr. Warren advocated that: (1) elderly patients need a special, more broadly based interdisciplinary approach to their care than do younger patients; and (2) no patient should be admitted to a long-term care facility without a careful medical and psychosocial assessment and at least a trial of rehabilitation.²

These principles not only led to the development of geriatrics as a specialty within the British National Health Service but continue today to underlie Great Britain's contemporary "progressive geriatric care" program.²

*From the Department of Medicine, Medical University of South Carolina, Charleston.

**Address correspondence to Dr. Pennypacker at the Department of Medicine, Medical University of South Carolina, 171 Ashley Avenue, Charleston, SC 29425-2220.

U. S., T. Franklin Williams, M. D., demonstrated similarly impressive outcomes with CGA.³ Dr. Williams, utilizing a three-member multidisciplinary team (physician, public health nurse clinician, and social worker), avoided nursing home placement for almost two thirds of patients referred to him for long-term care in Monroe County, New York. Through a team approach to assessment, Williams found that many of his patients could be adequately managed in supervised boarding homes or in their own homes with assistance from community services. Williams concluded that altering the traditional disposition of his patients through the CGA process resulted in potential savings of over two million dollars annually.

The work of these two pioneering geriatricians has drawn attention to the concept of comprehensive geriatric assessment. Because of the world's rapidly aging population, and rising health care costs, some investigators have sought to refine the original model. As a result, many variations of CGA have been tried in a variety of settings within the United States and abroad. The relative strengths and weaknesses of these forms of CGA are summarized below.

CGA: MODELS AND EFFICACY

The basic multidisciplinary CGA team is composed of a geriatrician, a geriatric nurse and a social worker. To this core team, additional health professionals may be added such as dietitians, pharmacists, psychologists, occupational and physical therapists, and dentists. The composition of the team is often dictated by the availability of personnel and resources. CGA teams may also be distinguished by their specific purpose, i.e.; patient care, teaching, research, etc.

For purposes of reviewing the literature, it is deemed appropriate to group the trials of CGA into three clinical settings: inpatient units, inpatient consultations, and outpatient consultations.

(1) Inpatient Units

The landmark study of inpatient CGA was conducted within the Sepulveda Veterans Administration Hospital.⁴ In this study, all frail elderly patients admitted to the hospital were randomly selected to receive care on the Geriatric Evaluation Unit (GEU) or the various medical wards. GEU-assigned patients were found to be less often discharged to nursing homes (12.7% vs. 30%), less likely to be re-hospitalized (34.9% vs. 50%), and suffer a significantly lower one-year mortality (23.8% vs. 48.3%). However, because patients in the GEU were also followed-up in a specialized geriatric outpatient clinic, the long term beneficial effects of the GEU alone could not be identified.

Applegate⁵ demonstrated a similar reduction in the rate of nursing home placement for patients treated on a GEU located within a community-based rehabilitation hospital. A trend towards lower overall mortality was also seen in patients treated in the GEU. Because these data were generated outside the VA setting (and therefore included a much greater proportion of women), without specialized follow-up, the results are considered to be somewhat more generalizable.

The foregoing two studies suggest that inpatient interdisciplinary care can result in a lower rate of nursing home placement among frail, elderly patients. Further investigation is needed to determine which elements of this program (i.e., patient selection, assessment, management, specialized follow-up) are responsible for its apparent efficacy.

(2) Inpatient Consultations

In contrast to inpatient geriatric units, data supporting the efficacy of inpatient CGA consultation is less clear. Despite compliance with the CGA teams recommendations, Saltz et al⁶ concluded that inpatient consultations performed on an unselected group of elderly veterans without follow-up in a specialized geriatric management unit did not alter length of stay, in-hospital complications, or dis-

charge placement. However, Hogan⁷ reports that when high risk patients are targeted by initially screening for "common geriatric disorders" (confusion, falls, incontinence, polypharmacy), CGA consultation led to improvements in functional status, a reduction in nursing home placement, and a lower short-term mortality. Interestingly, the initial decrease in mortality observed in Hogan's study patients seemed to "wash-out" after 12 months, suggesting that the impact of a one-time consultation may be time-limited.

(3) *Outpatient Consultations*

The application of CGA to outpatient management has produced mixed results. Epstein and his colleagues,⁸ operating within the setting of a large HMO, examined the effect of a one-time assessment performed on a randomly selected group of elderly patients. Although the assessment team was able to identify previously unrecognized problems in 35 percent of patients evaluated, written consultation to the primary physician did not produce any measurable impact on the health status of study patients. Conversely, Williams⁹ was able to demonstrate that when "frail older persons" were evaluated by a CGA team, study patients spent almost 40 fewer days in-hospital (with a concomitant 25 percent reduction in overall institutional costs per year) as compared to patients evaluated by general internists in the community.

CONCLUSION

In summary, comprehensive geriatric assessment in the United States has evolved rapidly over the past two decades. By itself, CGA appears to be only marginally beneficial. However, when patients are appropriately tar-

geted, access to support services is available, and follow-up intervention by selected team members is made, CGA appears to have an important role in the management of frail, elderly patients. Finding the "optimal blueprint" for CGA will undoubtedly benefit our entire health care system, as well as our elderly patients. □

REFERENCES

1. Matthews, D: Dr. Marjory Warren and the origin of British geriatrics. *J Am Geriatr Soc* 32: 253-258, 1984.
2. Rubenstein, L: Geriatric assessment programs in the United States: their growing role and impact. *Clinics in Geriatric Medicine* 2: 99-111, 1986.
3. Williams, T; Hill, J; Fairbank, M et al: Appropriate placement of the chronically ill and aged: a successful approach by evaluation. *JAMA* 226: 1332-1335, 1973.
4. Rubenstein, L; Josephson, K; Wieland, G et al: Effectiveness of a geriatric evaluation unit: a randomized clinical trial. *N Engl J Med* 311: 1664-1670, 1984.
5. Applegate, W; Miller, S; Graney, M et al: A randomized, controlled trial of a geriatric assessment unit in a community rehabilitation hospital. *N Engl J Med* 322: 1572-1578, 1990.
6. Saltz, C, McVey, L; Becker, P et al: Impact of a geriatric consultation team on discharge placement and repeat hospitalization. *Gerontologist* 28: 344-350, 1988.
7. Hogan, D; Fox, R, Badley, B et al: Effect of a geriatric consultation service on management of patients in an acute care hospital. *CAJ* 136: 71-717, 1987.
8. Epstein, A; Hall, J; Fretwell, M et al: Consultative geriatric assessment for ambulatory patients. *JAMA* 263: 538-544, 1990.
9. Williams, M; Williams, T; Zimmer, J et al: How does the team approach to outpatient geriatric evaluation compare with traditional care: a report of a randomized controlled trial. *J Am Geriatr Soc* 35: 1071-1078, 1987.
10. Rubenstein, L; Stuck, A; Siu, A et al: Impacts of geriatric evaluation and management programs on defined outcomes: overview of the evidence. *J Am Geriatr Soc Sup* 39: 8S-16S, 1991.

TREATMENT OF HYPERTENSION IN THE ELDERLY*

G. PAUL ELEAZER, M. D.**

Hypertension remains one of the diseases most commonly found in elderly persons in Western society. Prevalence rates vary between 30-50 percent depending on criteria used and the population studied. This article reviews the management of hypertension in the elderly with emphasis on newer agents including angiotensin converting enzyme (ACE) inhibitors and calcium channel blockers (CCBs) rather than the etiology and pathophysiology which are covered in other articles.¹⁻⁴

Several large studies have shown the beneficial effects of treating hypertension in elderly persons and are summarized in Table 1. Benefits shown include reductions in fatal and non-fatal stroke, and coronary heart disease.⁵⁻¹⁰ The results of the Systolic Hypertension in the Elderly Program (SHEP) confirm that treatment of isolated systolic hypertension (defined as systolic blood pressure greater than 160 and diastolic blood pressure less than 90) is beneficial. This study showed reductions in stroke incidence and cardiovascular events.¹⁰

While there are benefits of treating hypertension, elderly patients are particularly vulnerable to side effects of medications including the effects of decreased cerebral, coronary, and renal perfusion.

Excessive lowering of blood pressure may lead to cerebral hypoperfusion and result in dizziness, falls, loss of consciousness and even stroke. The frequency of orthostatic hypotension increases in elderly people and it is important to monitor orthostatic changes when starting antihypertensives or adjusting

dosages. Because non-pharmacologic therapy poses little risk, it should remain a high priority for treating mild hypertension.^{11,12}

Excessive lowering of diastolic blood pressure may lead to impaired coronary artery blood flow. Cardiac mortality may actually increase if diastolic blood pressure is lowered excessively. This phenomena has been described as the "J curve." Thus, the "optimal" diastolic blood pressure may be in the range of 85-90mm Hg or perhaps slightly higher in elderly patients.¹³⁻¹⁶ Others have argued that the increase in mortality is due to other causes and that blood pressure may be lowered below 85mm Hg without risk.¹⁷

APPROACH TO THERAPY

Given the risks and benefits of therapy, it is reasonable to treat sustained diastolic blood pressures greater than 95-100mm Hg. or isolated systolic hypertension (SBP > 160mm Hg) when there has been a sustained rise in blood pressure over a period of months on at least two or three separate readings. Isolated elevations of blood pressure may result from anxiety (white coat hypertension and others), pain, exercise as well as other causes and should be followed closely but often do not require treatment.

Several points should be emphasized in elderly patients. First, because of atherosclerosis, arteries may become calcified and result in "pseudohypertension" which can be detected clinically by Osler's maneuver. To perform Osler's maneuver, inflate the blood pressure cuff above the systolic pressure and then palpate to see if the brachial or radial artery remains palpable (it should not). A positive Osler's maneuver suggests that the elevated blood pressure reading is due to stiffness in the arterial wall rather than blood pressure itself and can be further evaluated by

*From the Department of Medicine, University of South Carolina School of Medicine, Columbia.

**Address correspondence to Dr. Eleazer at 2 Richland Medical Park, Suite 502, Columbia, SC 29203.

TABLE 1
EVIDENCE FAVORING TREATMENT OF HYPERTENSION IN THE ELDERLY

STUDY (REFERENCE)	AGE	MEDICATIONS	OUTCOME
Cooperative Study VA (5)	60-69	HCTZ/Reserpine	32% reduction in cardio-vascular mortality (NS).
Hypertension Detection and Follow-up Program (HDFP) (6)	60-69	Chlorthalidone/ Reserpine or methyldopa	27% reduction in cardio-vascular mortality.
Australian (8)	60-69	Chlorthiazide/various second agents	39% reduction in trial end points (NS).
European Working Party on Hypertension in the elderly (EWPHE) (7)	60-97	HCTZ - Triamterine/ methyldopa	38% reduction in cardiac mortality (significant), 32% reduction in cerebrovascular mortality (NS).
Coope (9)	60-79	Beta Blocker/ Benfluorothiazide	30% reduction in fatal strokes.
Systolic Hypertension in the Elderly Program (SHEP) (10)	Over 60	Chlorthalidone/ Atenolol or Reserpine	37% reduction in stroke, 31% reduction in cardio-vascular events.

NS = Did not reach statistical significance

an intraarterial pressure recording. Also, because of the high prevalence of peripheral arterial disease in this group, blood pressures should be checked in both arms and one leg, since marked discrepancies in pressures may lead to erroneous therapeutic decisions. Orthostatic blood pressure and pulse in the supine and standing position (after three minutes) should be recorded annually and with any changes in medication, since elderly patients are more prone to develop orthostasis and its complications. In general, more than a 20 mm Hg systolic fall in blood pressure is considered abnormal in an elderly person and warrants close monitoring. Blood pressure cuff size is important since elderly people are often either obese or underweight. Thigh cuffs for obese patients and child cuffs for thin patients should be available.

The target blood pressure for an elderly patient generally will be a diastolic blood pressure in the range of 90-100 mm Hg and systolic blood pressure of 140-150 mm Hg.

Initial therapy for blood pressures between 160-180 systolic or 95-100 diastolic includes non-pharmacologic methods such as sodium restriction, smoking cessation, aerobic exer-

cise, restriction of ethanol and maintenance of ideal body weight.^{11,12} For patients with more severe hypertension or those refractory to non-pharmacologic methods, three general principles are useful in guiding pharmacologic therapy:

1. Match the selection of the antihypertensive agent to co-existing diseases or conditions.
2. Also base selection of therapy on such factors as quality of life, costs, and medication compliance.
3. *Primum non Nocere* – “First, do no harm.”

Match Treatment to Co-Existing Conditions or Diseases

Beginning in 1988 the Joint National Committee on Detection and Evaluation of Treatment of High Blood Pressure broadened the traditional step care approach to include newer agents such as (ACE) inhibitors and (CCBs). This approach has particular relevance in elderly patients because the prevalence of co-morbid conditions is high in this population. It is often in the patient's best interest to select an antihypertensive agent

that will also benefit the co-existing disease or condition (or at least not aggravate or exacerbate a pre-existing disease or condition).

Hypertension in the Elderly Patient With Diabetes

Hypertension in diabetes frequently co-exists in elderly persons and there are some special considerations for treating hypertension in diabetics. Angiotensin converting enzyme (ACE) inhibitors and some calcium channel blockers may reduce the associated proteinuria in diabetic nephrosclerosis.^{18,19} Both of these classes of agents are reasonable first line therapy for the elderly person who has concomitant hypertension and diabetes. Patients with diabetes mellitus and mild renal impairment may also have diminished renin output resulting in hyporeninemic hypoaldosteronism. Close monitoring of serum potassium is important in these patients due to the risk of hyperkalemia in patients receiving ACE inhibitors.

In general, beta blockers and thiazide diuretics are best avoided in patients with diabetes. Beta blockers may block symptoms of hypoglycemia and also impair glucose control¹¹ while diuretics can worsen glycemic control and may actually increase mortality.^{11,20}

Hypertension in the Elderly Patient With Coronary Artery Disease

Patients with pre-existing coronary artery disease and prior myocardial infarction or angina may often benefit from beta blockers or calcium channel blockers (CCBs) since these agents lower arterial pressure and are also used to treat coronary artery disease. Beta blockers have been shown to prolong survival in the post myocardial infarction patient (secondary prevention) and there is suggestive data that some calcium channel blockers may delay progression or even reverse coronary atherosclerosis (primary prevention).²² It may also be prudent to avoid diuretics in this population due to an unfavorable impact on lipids and electrolytes.

Hypertension in the Elderly Patient With Congestive Heart Failure (CHF)

ACE inhibitors prolong life in patients with congestive heart failure and are preferred in the patient with co-existing congestive heart failure and hypertension.^{22,23} Diuretics may be a useful adjunct to ACE inhibitors in treating congestive heart failure, and may improve blood pressure control. Patients with congestive heart failure have a relative contraindication to the use of both beta blockers and verapamil.

Patients With Hypertension and Left Ventricular Hypertrophy

The presence left ventricular hypertrophy independently predicts increased morbidity and mortality in hypertensive patients.^{24,25} While it has not been proven that reversal of left ventricular hypertrophy lowers cardiovascular morbidity and mortality, it would seem reasonable that antihypertensive therapy in these patients should be targeted at both reducing blood pressure and reducing hypertrophy of the left ventricle.²⁵ Certain classes of agents appear to be more effective in reducing left ventricular hypertrophy than others. More effective agents include CCBs, ACE inhibitors, centrally acting alpha-2 agonists, such as methyldopa and clonidine, and peripheral alpha-1 blockers such as prazosin.²⁶⁻²⁹ Diuretics and beta blockers have shown inconsistent results in reducing LVH.^{26,28} Table 2 summarizes a list of these and other common diseases in elderly patients with preferred classes of agents for blood pressure control (as well as agents to avoid).

Patients Without Co-Existing Conditions or Diseases

There is not a consensus regarding the optimal antihypertensive in the elderly who have no concurrent illnesses.³⁰ Some prefer less expensive agents (such as diuretics or beta blockers), others prefer newer agents such as ACE inhibitors or calcium channel blockers.

Thiazide diuretics are effective and less

expensive than ACE inhibitors or calcium channel blockers. However, electrolyte abnormalities are common and frequent laboratory monitoring and potassium supplementation may eliminate much of the cost savings. When thiazide diuretics are used, the dose should not exceed the equivalent of hydrochlorothiazide 25 mg. per day since higher dosages are no more effective and result in a higher incidence of side effects. Use of a thiazide diuretic combined with a potassium sparing agent may eliminate the need for potassium supplements.

Beta blockers usually are well tolerated in elderly patients and are relatively inexpensive. Clinicians should be alert for side effects such as fatigue, depression, malaise and impotence since the elderly person may attribute these medication side effects to "just getting old."

Reserpine is also a cost effective and effica-

cious drug in elderly patients^{5,6,10} but is no longer commonly used due to problems with depression and anticholinergic side effects. However, if dosages are kept below 0.2 mg. per day and patients are monitored for adverse effects, the drug is relatively safe and inexpensive.

ACE inhibitors and CCBs have been shown to be safe and effective in elderly persons and are very well tolerated. Their main disadvantage is cost. Theoretically, these agents have advantages over beta blockers and diuretics in that they do not unfavorably alter lipids and have less effect on electrolytes. However, long term studies of their use in elderly patients are not available and their impact on cardiac and cerebrovascular disease in this setting remains to be determined.

Until the debate over newer vs. older agents resolves, physicians should consider such factors as quality of life (being alert to such non-

TABLE 2
CHOICE OF ANTIHYPERTENSIVE AGENTS IN ELDERLY
(Based on Co-Existing Disease or Condition)

Condition	Preferred Class of Agent	Agents to Avoid
Diabetes Mellitus	ACE Inhibitors Calcium Channel Blockers	Diuretics Beta Blockers
Angina/Myocardial Infarction	Beta Blockers Calcium Channel Blockers	Diuretics
Congestive Heart Failure	ACE Inhibitors Diuretics	Beta Blockers Some Calcium Channel Blockers
Left Ventricular Hypertrophy	Calcium Channel Blockers	Beta Blockers
Hyperlipidemia	Alpha 1 Blockers Calcium Channel Blockers	Diuretics Beta Blockers (without ISA)
Prostatic Hypertrophy	Alpha 1 Blockers	Clonidine Diuretics
Bronchospastic Airway Disease	Most Agents Effective	Beta Blockers

specific side effects as fatigue, depression, malaise, and decreased libido), dosing frequency, cost (including laboratory monitoring, potassium supplements, etc.), and the individual patient's preference for medication. Cost is a major concern for many elderly living on fixed incomes. Table 3 lists approximate medication costs for selected agents.

Primum Non Nocere

Physicians must be alert to adverse effects of antihypertensive therapy. Quality of life is of great concern and should be maintained if at all possible. Given the multitude of antihypertensive agents available, most patients should be able to be managed with pharmacotherapy with only minimal to no side effects.

To help avoid side effects, drugs should be

started at one half the usual starting dose recommended for younger patients and then increased gradually (for example every three to six weeks) until blood pressure is lowered into the target range. Monitoring for side effects is essential. After blood pressure has been controlled for six months, an attempt to reduce dosage is appropriate.

CONCLUSION

Hypertension is common in elderly patients and the benefits of therapy have now been shown in many studies. Treatment should, in general, begin with non-pharmacologic therapy in milder cases and with medications if non-pharmacologic therapy is unsuccessful or hypertension more severe. The selection of specific therapy should take into consideration a patient's pre-existing disease and con-

TABLE 3
SELECTED ANTIHYPERTENSIVE AGENTS

CLASS	DRUGS	BRAND NAME	DOSING FREQUENCY	APPROX. WHOLESALE COST
ACE Inhibitors	Benazepril	Lotensin	QD	\$19.00
	Captopril	Capoten	BID or TID	\$36.00
	Enalapril	Vasotec	QD or BID	\$24.50
	Fosinopril	Monopril	QD	\$23.00
	Lisonopril	Prinivil/Zestril	QD	\$22.00
	Quinapril	Accupril	QD or BID	\$22.75
	Ramipril	Altace	QD or BID	\$20.75
Calcium Channel Blockers	Nifedipine	Procardia XL	QD	\$31.50
	Diltiazim	Cardizem CD	QD	\$42.00
	Verapamil	Veralan/Calan/SR	QD	\$29.75-44.50
		Isoptin SR		
	Felodipine	Plendil	QD	\$32.00
	Nicardipine	Cardene SR	BID	\$36.50
Alpha-1 Blockers Terazosin	Prazosin	Minipress, et. al.	BID	\$10.00
	Hytrin	QD	\$29.00	
	Doxazosin	Cardura	QD	\$24.00
Others	HCTZ	Esidrix, et. al.	QD	\$ 0.30
	Propranolol	Inderal, et. al.	BID-TID	\$ 9.00
	Atenolol	Tenormen, et. al.	QD	\$15.00
	Reserpine	generic	QD	\$ 0.15
	Clonidine	Catapress, et. al.	BID-TID	\$ 1.80

*Approximate cost to the pharmacist for 30 days of medication at commonly used dosages as listed in *Drug Topics Redbook*, 1992. Cost to the patient may vary considerably.

ditions as well as issues of cost, compliance, and quality of life. Finally, clinicians should be alert to the development of drug side effects and the dangers of overly aggressive therapy of hypertension in elderly patients. □

REFERENCES

1. Applegate WB. Hypertension in elderly patients. *Annals of Internal Medicine* 110:901-915 (1989).
2. Weir MR. Impact of age, race, and obesity on hypertensive mechanisms and therapy. *AJM* 90(5A):35-145 (1991).
3. Rosmarin PC. Secondary hypertension. *Clinics in Geriatric Medicine* 5(4):753-768 (1989).
4. Allman RM. Basic evaluation of older persons with hypertension. *Clinics in Geriatric Medicine* 5(4):717-732 (1989).
5. Veterans Administration Cooperative Study Group on Antihypertensive Agents. Effects of treatment on morbidity in hypertension II: Results in patients with diastolic blood pressure averaging 115 through 129 mm Hg. *JAMA* 213:1143-1152 (1970).
6. HDFP Cooperative Group: Five year findings of hypertension detection and follow up program: I. Reduction in mortality of persons with high blood pressure including mild hypertension. II. Mortality by race, sex and age. *JAMA* 242:2562-2577 (1979).
7. Amery A, Brixko P, Clement D, et. al. Mortality and morbidity results from the European Working Party on High Blood Pressure in the Elderly Trial*. *Lancet* 1349-1 354 (1985).
8. Management Committee. Treatment of mild hypertension in the elderly. *Med J Aust* 2:398-402 (1981).
9. Coope J, Warrender T. Randomized trial of hypertension in elderly patients in primary care. *Br Med J* 293:1145-1151 (1986).
10. The SHEP Cooperative Research Group. Prevention of stroke by antihypertensive drug treatment in older persons with isolated systolic hypertension. *JAMA* 265:3255-3264 (1991).
11. National High Blood Pressure Education Program: The 1988 report of the Joint Committee on Detection, Evaluation and Treatment of High Blood Pressure. *Arch Intern Med* 148:1023-1038(1988).
12. Applegate W, Miller S, Elam J, et. al. Nonpharmacologic intervention to reduce blood pressure in older patients with mild hypertension. *Arch Intern Med* 152:1162-1166(1992).
13. Farnett L, Mulrow CD, Linn WD, Lucey CR, Tuley MR. The J-Curve phenomenon and the treatment of hypertension: Is there a point beyond which pressure reduction is dangerous? *JAMA* 265(4):489-495(1991).
14. McCloskey LW, Psaty BM, Koepsell TD, Aagaard GN. Level of blood pressure and risk of myocardial infarction among treated hypertensive patients.
15. Amery A, Brixko R, Clement D, et. al Efficacy of antihypertensive drug treatment according to age, sex, blood pressure, and previous cardiovascular disease in patients over the age of 60*. *Lancet* 589-592 (1986).
16. Cruickshank JM. Coronary flow reserve and the J curve relation between diastolic blood pressure and myocardial infarction. *BMJ* 297:1227-1230 (1988).
17. Fletcher AE, Bulpitt CJ. How far should blood pressure be lowered? *Current Concepts* 326(4):251-254 (1992).
18. Bakris G. Effects of Diltiazem or Lisinopril on massive proteinuria associated with diabetes mellitus. *Annals of Internal Medicine* 112:707-708 (1990).
19. Noth R, Krolewski A, Kaysen G, et. al. Diabetic nephropathy: Hemodynamic basis and implications for disease management. *Annals of Internal Medicine* 110:795-813 (1989).
20. Warram JH, Laffel LM, Valsania P, Christlieb AR, Krolewski AS. Excess mortality associated with diuretic therapy in diabetes mellitus. *Arch Intern Med* 151:1350-1356 (1991).
21. Grossman E, Shemesh J, Shamiss A, Thaler M, et. al. Left ventricular mass in diabetes-hypertension. *Arch Intern Med* 152:1001-1004 (1992).
22. Kaplan NM. Calcium entry blockers in the treatment of hypertension. *JAMA* 262(6):817-823 (1989).
23. Braunwald E. ACE inhibitors - A cornerstone of the treatment of heart failure. *NEJM* 325(5):351-353 (1991).
24. Koren MJ, Devereux RB, Casale PN, Savage DD, Laragh JH. Relation of left ventricular mass and geometry to morbidity and mortality in uncomplicated essential hypertension. *Annals of Internal Medicine* 114:345-352 (1991).
25. Levy D, et. al. Prognostic implications of echocardiographically determined left ventricular mass in the Framingham Heart Study. *NEJM* 322:1561-1566.
26. Schmieder RE, Messerli FH. Reversal of left ventricular hypertrophy: A desirable therapeutic goal? *J Cardiovasc Pharmacol* 16(6):S16-S22 (1990).
27. Pfeffer MA, Pfeffer JM. Reversing cardiac hypertrophy in hypertension. *NEJM* 322(19):1388-1390 (1990).
28. Motz W, Klepzig M, Strauer BE. Regression of cardiac hypertrophy: Experimental and clinical results. *J Cardiovasc Pharmacol* 10(6):S148-S152 (1987).
29. Schulman SP, Weiss JL, Becker LC, et. al. The effects of antihypertensive therapy on left ventricular mass in elderly patients. *NEJM* 322(19):1350-1356 (1990).
30. The Department of Epidemiology and Social Medicine, Albert Einstein College of Medicine/Montefiore Medical Center. Which antihypertensive drugs first And why! *JAMA* 267(20):2786-2787 (1992).



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SCMA NEWSLETTER

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Joy Drennen, Editor
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MEDICARE UPDATE

Administration officials and key Republican Congressional leaders have indicated that President Bush will veto HR 11 (which includes priority Medicare amendments regarding EKGs and new physician payment) in order to maintain his renewed pledge to oppose any new tax increases. However, filibusters precluded consideration of a House-passed bill that could have served as an alternative vehicle for the Medicare amendments. In addition, House members did not want to do anything that would delay adjournment and their campaign plans. The adjournment of the House removed any opportunity for a possible vote to override the President's anticipated veto of HR 11.

Having obtained a favorable outcome in the House-Senate conference committee and on the House floor, medicine is in a strong position to secure passage of priority Medicare amendments in the first session of the 103rd Congress. In anticipation of a Presidential veto of HR 11, plans are underway to seek support from key returning members of Congress for action early next year on amendments to repeal "new" physician payment disparities, restore EKG payments, improve the GPCI data and adopt additional anti-hassle measures.

Electronic Claims Processing: According to the AMA, a new Medicare policy has passed, buried in a Congressional appropriations bill despite the objections of Pete Stark, which requires carriers to pay electronic claims after 14 days, but hold all paper claims for 27 days. This contradicts existing law which requires participating physicians to be paid within 17 days and non-par within 24 days. If the President vetoes HR 11, however, it appears that Medicare will be required to pay you interest on any clean claims which are not paid within 17 days for participating physicians and within 24 days for non-par.

If the difference in Medicare timeliness of payment was a factor in your decision to become participating this year, be sure to keep apprised of this situation when making your decision for 1993.

Direct Deposit Payment Procedures Finalized for Provider Claims: HCFA has announced the availability and implementation of a direct deposit payment policy and procedures for paying providers and suppliers under Medicare Parts A and B. Effective November 20, 1992, providers may elect to receive claims payments through either electronic funds transfer or hard copy checks sent directly by first class mail. Intermediaries and carriers may pay providers by direct deposit if the providers are already electronic media claims billers, accept an electronic remittance notice in lieu of a paper remittance notice, and request electronic funds transfer in writing. For any provider that has not requested direct deposit, intermediaries and carriers will continue to make payments to the provider via hard copy check.

October Medicare Advisory: By now you should have received the October, 1992 Medicare Advisory. Issue 46 (Billing for Physical Therapy) is a new issue. You should read this advisory carefully as it deals with many claim processing and medical policy issues. Another advisory will be sent in November with the '93 HCPCS, so be on the lookout for this advisory.

Code 80500: Effective November 1, 1992, Code 80500 no longer requires documentation prior to payment. You may now file electronically and Medicare will do post-payment reviews. You may be required to provide documentation at that time.

Waivered Lab Codes: Waivered labs must be using the waived lab codes by December 1, 1992. You may use either the Q codes or the CPT-4 codes until then. Medicare payments for the waived tests are as follows:

Q0095	Urine Pregnancy Test	\$11.37
Q0096	Ovulation Test	\$11.92
Q0097	Hemoglobin	\$ 7.52
Q0098	Glucose	\$ 4.76
82270	Blood, Occult; Feces	\$ 3.72
Q0100	Urinalysis	\$ 3.72
Q0101	Microhematocrit	\$ 3.42
Q0102	Sedimentation Rate	\$ 5.40



ICD-9 Diagnosis Coding: Medicaid claims beginning with date of service 10/1/92 are being edited based on the October, 1992 version of ICD-9-CM.

Coding Changes under the Clinical Laboratory Improvement Act of 1988 (CLIA): Medicaid is now accepting the new Q codes for waived laboratory procedures published in the October 20, 1992 Medicaid Bulletin. Further information regarding CLIA regulations will be disseminated as it becomes available.

Direct Electronic Billing: Occasionally a purge of patient eligibility information within the electronic billing sys-

tem prevents an electronic claim from being accepted for processing, although the patient may be eligible on the date in question. When this occurs, the claim must be billed on paper ("hard copy"). Please verify the patient has a card indicating eligibility for the appropriate month.

Blue Cross/Blue Shield of South Carolina forwards electronic claims once a week to the Finance Commission for processing. Companion Technologies collects and stores each day's transmission of electronic claims until the weekly transfer to Medicaid, at which time processing begins. □

NEW CODING BOOKS

The 1993 CPT-4 is scheduled for delivery in December, 1992. To order, you may call the AMA at 1-800-621-8335. The cost to AMA members is \$29.95 and non-members \$36.95. CPT-4 is also available on floppy disk and magnetic tape.

The 1993 ICD-9 will also be available in December. Call the AMA at the above number. AMA member price is \$29.95 and non-member \$36.95. It is also available on floppy disk or color coded. *Contact the AMA for additional information about both publications.* □

ECONOMIC CENSUS FORMS

Some 3.5 million American businesses, including a sampling of doctors' offices, will be receiving 1992 Economic Census forms in December. The AMA urges physicians who receive these forms to complete and return them to the US Census Bureau by the February 15 deadline. It is important to emphasize that not every office will receive the survey. *If a survey is received, however, it is imperative to respond as failure to report carries a \$500 fine and willfully providing false information can result in a \$10,000 fine. If you do not receive a survey, you have nothing to worry about and need to do nothing.* □

OSHA UPDATE

The President signed into law the Labor/HHS Appropriations Bill (HR 5677). Due to AMA lobbying, the bill contains language directing OSHA to reexamine the bloodborne pathogens standard as it applies to the practice of medicine in physician offices. It also directs OSHA to consult with representatives of the medical profession. □

QUESTIONS TO ASK PRIOR TO SIGNING WITH A PPO

Prior to signing with a PPO, your office should carefully review the proposed agreement with the following questions in mind:

- Which companies does the PPO represent? (i.e., how many of my existing patients or how many potential new patients will be covered by this PPO?)
- Is there a charge to enroll?
- Does this agreement affect my ability to balance bill?
- If I don't sign, will the company refuse to accept assigned claims?
- What are the payment schedule and the terms pertaining to updates?
- How can I cancel the contract? Can the PPO cancel the contract?
- If I ever cease involvement with the PPO, what impact will this have on my patients? □

REPORTING CD4 T-CELL DATA

Since January 1, 1992, SC physicians have been required to report CD4 (T4) counts of <200 (in addition to previous requirements to report incidences of HIV infection and AIDS). From the July 1992 International AIDS Conference in Amsterdam came reports of AIDS-like conditions without HIV infection. The CDC, NIH and others subsequently determined a "case-definition" for this new syndrome called "idiopathic CD4 Lymphopenia" (ICL), which includes CD4 <300 in the absence of HIV infection.

Cases of CD4<300 should be reported to the DHEC AIDS Surveillance Department at 1-800-277-0873. These cases will, in turn, be reported to the CDC. □

WARNING ON MAIL-ORDER DRUGS

The illegal distribution of unapproved drug products within the U.S. by various overseas prescription drug mail-order houses continues via a number of lay/consumer publications. Typically, these companies advertise, with a price list, that they can sell U.S.-patented prescription drugs at reduced prices when compared to FDA approved versions. They urge U.S. consumers to order these prescriptions via a toll-free number, apparently without a doctor's prescription.

The promotion and distribution of unapproved drug products within the U.S. is illegal. The quality of these drugs is often unknown; in some cases the drugs are counterfeits. Furthermore, directions for appropriate use of the product may be inadequate.

Also, the ease with which these drugs can be obtained raises the concern of patient self-medication. Individual physicians should inform their patients of the potential health hazards of obtaining medications in this manner.

Physicians should also address the issue of prescription costs. If a patient is unable to pay for drug products, they may be able to get assistance from a pharmaceutical company's indigent program. *You may get information by contacting the Pharmaceutical Manufacturers Association toll-free hotline at 1-800-PMA-INFO.* ☐

CLIA UPDATE

Application Forms Package: Even labs that have received their registration certificates already will soon find out that their CLIA paperwork headaches aren't over. All labs, including those that now have CLIA registration certificates as well as those who contact HCFA for the first time to make application, will receive a comprehensive CLIA application forms package that asks for detailed information on general laboratory operations and personnel qualifications. New application forms (HCFA 114 and 116) will replace form 109. An additional form (HCFA 115) is scheduled to be completed as soon as HHS officials finish categorizing tests under the CLIA complexity model.

When labs receive the application package, they will be asked to fill out the forms and return them to HCFA. The agency will then bill the lab to cover the costs of CLIA compliance inspections that are scheduled during the next

two years. However, a section in the new HCFA 116 asks labs to check off a box if they are accredited by The College of American Pathologists (CAP) and other groups. Labs that indicate they are now accredited by a private organization won't automatically receive a bill for inspection.

CLIA/COLA "Deemed" Status: The Commission on Office Laboratory Accreditation (COLA) has submitted an application to HCFA and hopes to receive approval of its application before the end of 1992. In addition, the College of American Pathologists (CAP) has submitted an application for deemed status and the Joint Commission on Accreditation of Healthcare Organizations is also expected to do so. Laboratories accredited by voluntary accreditation entities and states that are granted deeming authority under CLIA '88 will be deemed to be in compliance with CLIA '88 and will not be subject to federal laboratory inspections. ☐

PROMOTE ORGAN DONATION

The SCMA, the SC Department of Highways and Public Transportation, and the SC Organ Procurement Agency have jointly produced a poster to raise awareness of the need for organ donation. These posters will be distributed to all Motor Vehicle offices and many hospitals and physicians' offices. Understandably, people have questions, fears and concerns about becoming an organ donor. A physician's unique relationship with his/her patients allows the opportunity to answer patients' questions and address their concerns.

If you are interested in receiving free posters and brochures on organ donation for your office, please call the SC Organ Procurement Agency at 1-800-462-0755.

CAMPAIGN MANAGEMENT SCHOOL

At least 95 percent of the 332 graduates of the AMA's Campaign Management School are now actively involved in running for office, managing a campaign or volunteering their time and talent to elect friends of medicine. The intensive one-week training session is taught by well-known campaign professionals and consultants via the case-study method. The AMA Campaign Management School will again hold classes in 1993 during the weeks of March 7 and July 11 in Washington, DC.

If you're interested, call the AMA Office of Political Education at (202) 789-7472.

MEDIA RESPONSE PLAN

The SCMA has begun a service to respond to negative media coverage throughout the state. In order to respond in a timely manner, we are asking each of you to monitor your daily newspaper for articles you believe are unfair, untrue or unfavorable to physicians.

Articles may be submitted to Suzanne Hellams, Director of Communications, at the SCMA. Responses in a publishable form will be prepared based on the timeliness and priority of the issue. Packets regarding this service have been sent to all county medical society presidents and there is more information on this month's "President's Page."

SOCIAL SECURITY MEDICAL EXPERTS NEEDED

The Department of Health and Human Services Office of Hearings and Appeals is seeking physicians to serve as medical experts to testify in Social Security and Supplemental Security Income disability cases in their geographical area.

The duties of a medical expert entail reviewing clinical and other medical records relating to mental and physical disorders and providing expert advice. No personal examination or referral of claimants is involved. Any personal appearances are at the convenience of the medical

expert. Reimbursement arrangements provide for remuneration at the rate of \$160 per case and for a personal appearance at a hearing (\$80 for prehearing study and \$80 for the actual appearance). When no appearance is required, \$80 is paid for study of the records and \$50 for a written response to questions. In addition, government travel regulations provide for reimbursement for mileage and other associated expenses.

For a recruitment packet of information, please call Pam Taylor at SCMA Headquarters. ☐

FEEDBACK FROM THE FIELD

Due to a lack of response, we are not able to report the results of the recent surveys.

Your input is important and we regret the fact that there was little response. We continue to welcome your suggestions and comments on issues affecting medicine.

CAPSULES

William W. Pryor, Sr., MD, of Greenville, has received the highest honor of the South Carolina Chapter of the American College of Physicians. The Laureate Award was presented to Dr. Pryor last month in recognition of his significant contribution to the community, through his long-standing dedication to his patients and the profession. In presenting the award to Dr. Pryor, Bruce W. Usher, MD, Governor of the SC Chapter of the ACP, stated that, "Dr. Pryor represents the best in medicine, combining medical care and science with the highest professional ethics and standards of the College."

Thomas A. Rowland, Jr., MD, of Columbia, has been elected President of the Southern Medical Association. Dr. Rowland is past Chief of Obstetrics and Gynecology at the South Carolina Baptist Hospital and Richland Memorial Hospital. He is a past President of the South Carolina Medical Association, SC OB/GYN Society, and the South Carolina Medical Care Foundation. Presently, Dr. Rowland serves as Chairman of the Board of Trustees of the Medical University of South Carolina and maintains a private practice in Columbia.

SELECTING EMPIRIC DRUG THERAPY FOR PNEUMONIA IN GERIATRIC PATIENTS*

K. WILEY, M. D.**

R. PITNER, PHARM. D.

Pneumonia is the most common infection and fourth leading cause of death in the elderly.¹ Because of the increased morbidity and mortality associated with pulmonary infections in this age group, prompt treatment is imperative. In this article, we discuss the most likely pathogens causing pneumonia in the elderly in four common clinical settings: community-acquired pneumonia (CAP) in otherwise healthy individuals; CAP in patients with underlying chronic disease; aspiration pneumonia; and hospital acquired pneumonia. We will then review the use of the antimicrobials we prefer in our geriatric practice, including our thoughts on some of the newer agents.

Elderly persons are more susceptible to pneumonia due to diminution of host defenses, and concomitant conditions that adversely affect pulmonary function.² Hospitalized geriatric patients are at the highest risk for pulmonary infection. In the community, geriatric patients living in skilled nursing facilities (SNF) have a significantly higher risk (68-114 per 1000) than those living in residential housing or private homes (25-44 per 1000).³

Infections in the elderly often have a much more subtle presentation than most younger adults. Typical symptoms of pneumonia such as cough, sputum production and fever may be absent and physical findings may be non-specific, especially in patients with underlying cardiac or pulmonary disease. Changes in clinical status are often less obvious, and patients may present with nothing more than a decline in mental or functional status, or decompensation of a previously stable chron-

ic condition such as diabetes or congestive heart failure.⁴ Diagnostic tests such as chest x-ray and white blood cell counts may appear normal, at least initially.^{5,6} Such atypical presentations can lead to delays in initiating treatment which, when combined with diminished host reserves may contribute to the increased morbidity in this age group.^{7,8}

Studies have shown that the most common etiologic agents of pneumonia in the elderly are similar to those found in younger age groups, although aerobic gram-negative bacilli and *S. aureus* tend to play a more prevalent role, largely through colonization of the oropharynx with organisms from the local environment. When compared to community dwelling younger adults, colonization of the oropharynx of elderly persons with gram-negative bacilli increases based on the setting where the person is residing: six to nine percent in community dwelling, 22 percent in SNF, and 40 percent in hospitalized patients.⁹ Thus the setting from which the infection was acquired is a major determinant of predominant flora.⁹ Other factors that increase gram-negative colonization are chronic antacid or H₂ blocker therapy, which might be lessened if sucralfate could be used,^{10,11} chronic use of broad spectrum antibiotics,¹² and enteral feedings.¹³

In community-acquired pneumonia in the elderly, *S. pneumoniae* is the most common pathogen, followed by *H. influenzae*, then other gram-negative organisms. *Legionella pneumophila* and *Moraxella catarrhalis* are less common in this group of patients. Pulmonary infections, in previously healthy adults, occurring after influenza outbreaks are usually caused by *S. pneumoniae*, *S. aureus*, and less commonly *H. influenzae*. Empiric coverage should focus on penicillinase resis-

*From the Department of Medicine, Medical University of South Carolina, Charleston.

**Address correspondence to Dr. Wiley at the Department of Medicine, Medical University of South Carolina, 171 Ashley Avenue, Charleston, SC 29425-2220.

tant penicillins such as methicillin or nafcillin, which are discussed below, or vancomycin, if methicillin resistant *S. aureus* (MRSA) is identified. Dosing regimens, including monitoring parameters, for vancomycin in the treatment of MRSA are based on renal function and are readily available in reference texts and from the clinical pharmacy service and will not be covered again here.

Ideally, initial therapy for pulmonary infections is based on the results of a sputum Gram stain. However, it has been estimated that specimens are obtainable from only about 35 percent of elderly patients with pneumonia.¹⁴ If results are unavailable, empiric therapy should take into account the setting and its most likely pathogens, the patient's underlying diseases if any, and the relative safety of the chosen antibiotic. In this article, we will primarily discuss initiating empiric therapy when a Gram stain is not available.

In general, beta-lactam antibiotics are good drugs for starting treatment in the elderly.¹⁵ They have minimal risk for renal, hepatic or sensory organ damage and offer broad spectrum activity against most of the common bacterial infections in the elderly. The third generation cephalosporins have a remarkably good safety profile that makes them well-suited for initial empiric use in the elderly. Aminoglycosides, because of their risk of nephro- and ototoxicity, probably should be avoided in the elderly if possible.¹⁵

For initial, empiric treatment of community-acquired pneumonia in otherwise healthy, elderly patients, we would consider treatment with a broad spectrum, parenteral, second or third generation cephalosporin, because, as noted above, we anticipate these patients to be infected with *S. pneumoniae*, *H. influenzae*, or *M. catarrhalis*. For example, cefuroxime 0.75-1.5 grams(gm) IV or IM every(Q) eight hours(Hr), using a lower dose in a smaller or less severely ill patient, and increasing as clinical judgement suggests. With protein binding in the range of 33-50 percent, the activity of cefuroxime would not be significantly changed by the hypoalbu-

minemia we often see in this age group, however the 10 percent incidence of decreased hematocrits would be cause for concern if the patient were anemic. As an alternative, we might consider cefonicid 0.5-2 gm, again considering the size of the patient and the severity of the infection, IV or IM Q 24 Hr. Although cefonicid has no reported effects on hematocrit and offers once a day dosing, which can greatly reduce nursing, preparation, and administration costs, we would be less inclined to select cefonicid, which is 98 percent protein bound, for an elderly patient with a low end albumin level who is currently stabilized on another highly protein bound drug such as warfarin or phenytoin. We would treat the patient for two weeks unless the clinical situation dictated otherwise, modifying the drug regimen in accordance with the culture and sensitivity (C&S) reports to more pathogen specific and less costly drugs when possible, and changing to oral drugs when the patient has been afebrile for two to three days.

Dosage adjustment for age-related renal function decline is similar for both drugs in that the dosing interval would be increased 50-100 percent in patients with creatinine clearances (CrCl) of 10-50 ml/min. Anuric patients require additional dose adjustments, which will not be covered here. We also avoid using maximum doses in patients with CrCl below 50 ml/min. The cost of these two drugs to the pharmacy is similar for comparable dosage regimens. We usually use the Cockcroft-Gault formula to estimate CrCl.¹⁶

For patients who cannot tolerate the cephalosporins, alternative drugs we would consider include trimethoprim-sulfamethoxazole (tmp/smx) because it is inexpensive and effective, or in sulfa sensitive patients we would consider ampicillin/sulbactam or ticarcillin clavulanate, which are both quite expensive yet offer essentially the same coverage for CAP as tmp/smx. The dosing of these drugs are, for tmp/smx 4 to 5 mg/kg of tmp IV Q 6-12 Hr, ticarcillin clavulanate at 3 gms IV/IM Q 4 Hr or ampicillin/sulbactam at

1.5 to 3 gms IV/IM Q 6 Hr. We usually double the dosing interval for patients with CrCl between 10 and 50 ml/min. If possible, we avoid using ticarcillin inpatients on sodium restricted diets because it contains 5.2 meq of sodium per gram.

Although often quite ill, elderly patients with previously stable underlying diseases such as diabetes, alcoholism or congestive heart failure who develop pneumonia may also present with atypical or subtle signs and symptoms. In this group of patients, *K. pneumoniae*, Enterobacteriaceae, and *Legionella* sp. become more prevalent pathogens. The possibility of *Legionella* sp. requires the addition of erythromycin to a third generation cephalosporin when initiating empiric therapy with these patients. Erythromycin given at 0.25 to 1 gm IV Q 6 Hr will not require dosage adjustment for declining renal function, however we see a 30-35 percent incidence of side effects, especially GI and administration site pain and inflammation. The newer macrolides, azithromycin and clarithromycin, offer similar antibacterial coverage with reported side effects in 10-12 percent of patients per the package inserts, however they are very expensive. Clinical experience does not yet support the use of these agents in elderly patients with CAP, although we expect to see increased use for initial empiric treatment in milder cases, even when hospitalized, and in patients who cannot tolerate erythromycin. Azithromycin does not require dosage adjustment for declining renal function, but clarithromycin's dosing interval should be doubled for CrCl of 10-30 ml/min.

Aspiration pneumonia is common in the elderly due to decreased mucociliary action and reduced cough and gag reflexes, especially in those with a history of alcoholism, cerebrovascular accident, esophageal disorders or reduced consciousness, including excessive sedation, which is often drug induced.¹⁷ This greatly increases the probability of infection with anaerobic organisms. For initial empiric treatment in a relatively clear case of community-acquired aspiration pneumonia, peni-

cillin G at a high dose of 20,000,000 units or more per day IV in two or more divided doses will often be effective. An alternative for patients who cannot tolerate penicillins would be clindamycin at 150 to 900 mg IV Q 6-8 Hr. No dosage adjustment is required for clindamycin for declining renal function. As the probability of gram-negative organisms increases, we add an aminoglycoside (see below), and if *S. aureus* is a possibility, we add a penicillinase resistant penicillin such as methicillin or nafcillin. Both drugs are dosed at 0.5 to 2 gm IV Q 6 Hr, and no dosage adjustment for declining renal function is required. Nafcillin has a high biliary excretion component, but otherwise we basically use these two drugs the same way.

Hospital-acquired pneumonia is two to three times more likely to occur in elderly patients than in patients less than 40 years of age.³ The characteristics of pneumonia acquired in SNF are similar to those acquired by hospitalized patients except that *Pseudomonas* is much more likely to be a pathogen in the hospital setting. The increased incidences of gram-negative colonizations in these elderly patients are 22 percent and 40 percent for SNF and hospitalized patients, respectively. These infections are often caused by *Klebsiella* species, *E. coli*, *P. mirabilis*, and *P. aeruginosa*. Gram-positive organisms such as *S. aureus* and *S. pneumoniae* are still possibilities, and because of the increased risk of aspiration, anaerobes must also be considered.

For nosocomial pneumonia in the geriatric population, we initiate empiric therapy with an antipseudomonal penicillin such as piperacillin 3-4 gm IV/IM Q 4-6 Hr or mezlocillin 3-4 gm IV/IM Q 4-6 Hr, and an aminoglycoside, usually gentamicin at 1-1.7 mg/kg IV/IM Q 8 Hr. It is important to treat aggressively for *pseudomonas* in this setting, although we tend to hold imipenem as a choice of last resort. Information on the dosing and monitoring of aminoglycosides, which depends on renal function, is readily available in reference texts and from the clin-

ical pharmacy service and will not be reviewed again here. For their class, mezlocillin and piperacillin provide the least amount of Na per dose (1.8 meq/gm), a concern for patients with CHF or hypertension, and mezlocillin has the least antiplatelet effect, which is important for patients taking anticoagulants. For either drug, we usually double the dosing interval when the CrCl is between 10 and 40 ml/min. An alternative regimen we would consider would be a third generation antipseudomonal cephalosporin such as ceftazidime or ceftizoxime, and gentamicin.

Fluoroquinolones such as ciprofloxacin, ofloxacin, enoxacin, and lomefloxacin show promise for the treatment of gram-negative pneumonia because they are highly effective orally, they have few drug interactions, and their side effects are usually mild and easily managed. Increasing reports of resistance developing during treatment have been disappointing, and thus the use of these agents for pneumonia in the elderly remains unclear.

The binding of aminoglycosides to cellular debris, to exudates and the pH at the site of infection require that higher doses be given to attain acceptable antibacterial activity in pulmonary infections.^{18,19,20} This further increases the chance of oto- and nephrotoxicity from these agents, especially in the elderly. Although the synergistic antibacterial activity with beta lactams is less apparent with aztreonam, we may substitute aztreonam 1 gm IV/IM Q 8 Hr for an aminoglycoside in the above regimens because of fewer toxicities and easier dosing for declines in renal function, i.e. we double the dosing interval with a CrCl of 10-40 ml/min.

SUMMARY

Rather than produce extensive lists of pathogens and antibiotics to cover every situation, we have tried to provide some insight into how we make decisions regarding the drug therapy of our geriatric patients when they develop pneumonia, and give some practical examples of how we would use those agents. □

REFERENCES

1. Garibaldi RA, Nurse BA. Infection in the elderly. *Am J Med.* 1986; 81(Suppl 1A):53-8.
2. Verghese A, Berk SL. Bacterial pneumonia in the elderly. *Medicine (Baltimore).* 1983; 62:271.
3. Niederman TJ, Fein AM. Pneumonia in the elderly. *Geriatric Clinics of North America.* 1986; 2:241-67.
4. Bently DW. Bacterial pneumonia in the elderly: Clinical features, diagnosis, etiology and treatment. *Gerontology.* 1984; 30:297-307.
5. Mandel GL, Douglas, Jr RG, Bennett JE. eds: *Principle and practice of infectious disease.* 3rd ed. New York: John Wiley and Sons, 1990.
6. Yoshikawa TT. Antimicrobial therapy for the elderly patient. *J Am Ger Soc.* 1990; 38:1353-72.
7. Valenti WM, Trudell RG, Bently DW. Factors predisposing to oropharyngeal colonization with gram negative bacilli in the aged. *N Eng J Med.* 1978; 298:1108-11.
8. Esposito AL, Pennington JE. The pathogenesis of bacterial pneumonia. In: Gleckman RA, Gantz NM, eds. *Infections in the elderly.* Boston: Little Brown; 1983; 53-61.
9. Bentley DW. Bacterial pneumonia in the elderly. *Hosp Prac.* 1988; 23:99-116.
10. Giannella RA et al. Gastric acid barrier to ingested microorganisms in man: studies in vivo and in vitro. *Gut.* 1972; 13:251.
11. Driks MR et al. Nosocomial pneumonia in intubated patients given sucralate as compared with antiacids of histamine type 2 blockers. *N Eng J Med.* 1987; 317:1376.
12. Sprunt L, Redman W. Evidence suggesting importance of role of interbacterial inhibition in maintaining balance of normal flora. *Ann Intern Med.* 1968; 68:579.
13. Pingleton SK, et al. Enteral nutrition in patients receiving mechanical ventilation: multiple sources of tracheal colonization include the stomach. *Am J Med.* 1986; 80:827.
14. Marrie TJ, Durant H, Kwan C. Nursing home-acquired pneumonia. A case-control study. *J Am Ger Soc.* 1986; 34:697-702.
15. Norman DC. Pneumonia in the elderly: Empiric antimicrobial therapy. *Geriatrics.* 1991; 46:26-32.
16. Cockcroft DW, Gault MH. Prediction of creatinine clearance from serum creatinine. *Nephron.* 1976; 16:31.
17. Klein RS, Steigbigel NH. Aspiration pneumonia. *Semin Infect Dis.* 1983; 5:274.
18. Mendelman PM et al. Aminoglycoside penetration, inactivation, and efficacy in cystic fibrosis sputum. *Am Rev Respir Dis.* 1985; 132:761.
19. Bergogne-Berezin E. Pharmacokinetics of antibiotics in respiratory secretions. In: Pennington JE, ed. *Respiratory infections: Diagnosis and management.* New York: Raven Press; 1983; 461.
20. Levy J et al. Bioactivity of gentamicin in purulent sputum from patients with cystic fibrosis or bronchiectasis: comparison with activity in serum. *J Infect Dis.* 1983; 148:1069.

FALLS IN THE ELDERLY*

CHARLES D. PETTIT, M. D.**

Falling is an unavoidable life experience. From birth to natural death, we wage a struggle to remain upright and to control forces that left unmanaged would result in unintentional grounding. In youth, most falls are trivial, but once the frailty of age overtakes us, the prospect of falling may become a frightening specter.

According to the United States Center for Health Statistics Data, in 1985, 247,000 hip fractures occurred among persons over age 45. The national cost of hip fracture in 1983 exceeded \$7 billion.¹ Patients age 85 years and older appeared to have a ten percent risk of hip fracture for each fall.² That segment of the U. S. population should triple by the year 2010 (U. S. Census Data). Of those who reach the age of 90, one-third of the women and one-sixth of the men will experience hip fracture.^{1,3}

Robbins et al summarized succinctly the epidemiology of fall risks of persons age 65 or older. One-third of those living at home and two-thirds of those living in nursing homes will fall each year. Ten to 25 percent will experience a serious complication.⁴

Tinetti et al reported on a population at least 75 years of age living in the community as part of the Yale Health and Aging Project. Each year approximately one-third of patients fell. Of those, one-fourth experienced serious injuries and six percent sustained at least one fracture as a direct result of falling. Of those who fell, 48 percent reported a persistent fear of falling and 26 percent curtailed activities of daily living.⁵

The search for the etiology of falls in the

elderly has been undertaken by both epidemiologists and clinicians alike and has yielded data suggesting a variety of variables. Polypharmacy and in particular sedative use, has been implicated in the etiology of falling, especially in women.⁴⁻⁹ Chronic illness appears to produce a number of risk factors such as deconditioning, particularly leg and hip girdle weakness, and associated balance and gait disorders which are strongly associated with increased risk of falls.^{4,7,8,10} Even simple environmental factors such as low temperature may increase risk of falls in a subset of the elderly population.⁷ Prior cerebral vascular accidents and even brain white matter changes without overt impairment of cognitive function may lead to changes in gait and equilibrium with an associated increased risk of falling in the elderly.¹¹ Sensory impairment, autonomic dysfunction with resultant orthostatic hypotension, peripheral neuropathy with proprioceptive defects all may further increase the likelihood of fall and subsequent injury. It appears that cognitive impairment is additive to all other risk for falls.^{2,4,5,7,12,13} Clinical experience would suggest that decreased safety awareness as experienced by patients with non-dominant hemisphere cortical infarcts may dramatically increase the risk of future falling.

Identification of risk factors, particularly those that may be modified, should remain foundational in the assessment of geriatric patients at risk for falling. Conditions which place the patients at risk will largely be discoverable if evaluation is systematic and includes assessment of age-related frailties. The general history should target evidence of impairment in the performance of activities of daily living, particularly problems associated with hip weakness or balance disorders.⁴

A prior history of falls within the past two years is predictive of future falls and should

*From the Department of Family and Preventive Medicine, University of South Carolina School of Medicine, Columbia.

**Address correspondence to Dr. Pettit at HealthSouth Rehabilitation Center, 2935 Colonial Drive, Columbia, SC 29203.

target the patient for further evaluation and preventive interventions.⁵ Incontinence may serve as a marker of frailty but is associated with an increased risk of falling.⁴ The pharmacologic history will identify patients with the major risk of polypharmacy as defined by the use of more than four medications on a regular basis.⁴ Sedative use alone is notable but long acting sedative use or exposure to major tranquilizers may be considered more problematic.⁴

Examinations should specifically examine cognitive function and target patients with overt cognitive decline for further and more specific neuropsychological assessments. Neurological examination with attention to previous cerebral vascular accident and associated deficits, peripheral neuropathy, proprioceptive defects, sensory and perceptual deficits and analysis of gait and balance disorders will allow for intelligent prescription of exercise and use of assistive devices.

Canes or walkers not only provide the patient support but also add additional input

of sensory awareness and body position.

The identification of tactile sensory deficits or marked proprioceptive deficits secondary to cerebral vascular accidents, spinal cord disease or peripheral neuropathy may mitigate for the use of such devices even in the absence of muscle weakness or joint pathology. Exploration of musculoskeletal diseases as they impact on gait and balance by simple assessment of a 15 meter walk and observation of attempts to rise from a low chair may identify conditions remediable by intensive rehabilitative therapies or bracing devices.

Identification of postural hypotension evidenced by a fall of 20 mm Hg or more with standing or a sustained standing systolic blood pressure of less than 110 mm Hg are both noteworthy as they predict an increased risk for fall, especially in women.⁷

The cataloging of individual patient risk factors or primary disabilities should lead to individualized prescription of preventive and restorative measures targeted to avoid secondary disabilities. Intense physical and

TABLE
CLINICALLY SIGNIFICANT FACTORS
WHICH INCREASE RISK OF FALL

- Polypharmacy - Particularly sedative use.
- Chronic illness.
- Deconditioning.
- Quadriceps and hip girdle weakness.
- Associated balance and gait disorders.
- Low environmental temperature.
- Prior stroke.
- Sensory impairment with visual and/or auditory deficits.
- Autonomic dysfunction resulting in orthostatic hypotension.
- Peripheral neuropathy with proprioceptive deficits.
- Dementia.
- History of prior falls.
- Incontinence.
- Sustained systolic blood pressure less than 110 mm
Mercury or orthostatic postural hypotension with a fall of
20 mm of Mercury or more with standing.

occupational therapies purposed to improve independence in activities of daily living and improve gait, balance, and endurance may be appropriate for many geriatric patients at risk for falling.

Diminished use of multiple drug therapies, especially those which are sedating, anticholinergic or prone to produce orthostatsis should result in decreased fall risk. The use of the lowest effective dose possible, generally with increased interval between doses, will not only lower side effect risk but is also likely to increase compliance.

Recommendations for age-appropriate footwear, with lowered heels and non-slick soles, is an important but practical concern that requires clinical address.

Identification and correction of visual and auditory impairments should allow for improved independent ambulation and avoidance of potential environmental hazards; thus

cataract extraction with intraocular lens implantation or hearing aid fitting may improve and preserve independent ambulation. If problems are identified with vision in dim light, then an activity prescription may limit independent ambulation to situations where sufficient ambient light exists.

Proactive approaches to fall prevention can include house calls to identify occult household traps. Non-secured throw rugs, uniformly painted stairs with difficult to see edges, raised door jams, and waxed linoleum have all been identified and may be easily corrected. Throw rugs appear to be aptly named, I think, due to their potential to throw patients and should be discarded. Difficult to see stair edges may be painted or otherwise marked. Door jams, upon which patients frequently trip, should be removed and heavily waxed floors stripped. A lustrous floor is of little consolation to the person who slips on it and

TABLE
POTENTIAL ENVIRONMENTAL HAZARDS

PROBLEM	PREVENTIVE MEASURE
Dim Lighting	<ul style="list-style-type: none"> • Night lighting in dimly lit areas • Sufficient wattage bulbs placed in areas to allow for clear and unimpeded vision
Uneven Floor Surface	<ul style="list-style-type: none"> • Night time bedside toilet
Throw Rugs	<ul style="list-style-type: none"> • Repair
Uniformly Painted Stairs With Difficult to See Edges	<ul style="list-style-type: none"> • Discard or secure • Paint stair edges with contrasting color
Raised Door Jams	<ul style="list-style-type: none"> • Eliminate
Highly Waxed Linoleum or Polished Hardwood Floors	<ul style="list-style-type: none"> • Strip wax • Discard household slippers without tread • Avoid floor polish
Room Space Obstacles Such as:	<ul style="list-style-type: none"> • Rearrange furniture or even remove obstacles
– Magazine Racks	
– Exposed Extension Cords	<ul style="list-style-type: none"> • Portable cordless telephone with belt clip to prevent isolation if injury does occur
– Sharp edged furnishings which increase risk for injury during fall	

sustains injury.

During a house call, footwear can be examined and inappropriate shoes identified. Room space should be open with all obstacles in the path of ambulation removed. Patients may be taught improved floor mobility so that being on the floor is not frightening, nor arising from it insurmountable.

Balance exercises, and in particular, head tilting exercises in patients with benign positional vertigo should be helpful. Other proactive approaches may avert potential tragedy. Cordless portable telephones are available which are small, inexpensive and are provided with a belt clip, and should prove an effective rescue device should a fall occur and immobility result. I have even suggested that plastic beverage bottles may be secured out of sight under furniture and cabinets in every room to serve as a source of fluid and calories should a fall result in inability to rise and thus seek help. Night lighting should be encouraged, but must be of sufficient wattage to allow for clear and unimpeded vision. Bed-side toilet use offers an alternative to waking others for assistance if the patient can manage bed to chair transfers independently. Restraints should be avoided wherever possible since their effectiveness has not yet been established (but the risk of injury with their use has been established).¹⁴

If all fails and a patient does fall, the evaluation should include not only analysis of the fall and its etiology, but also its results. As noted before, one-fourth of all falls in the elderly will result in injury and six percent in fracture, so the patient evaluation should search diligently for these injuries.

Long bone fractures, particularly femur fractures, may be associated with significant blood loss and even hypotension. In two bone systems such as the radius and ulna, it is difficult to fracture a single bone while leaving the other uninjured. The same is true for ring structures, such as the pelvis where isolated single fractures are uncommon. Gross physical signs of trauma such as external rotation of a foot or angulation of an extremity are not

likely to be missed, but more subtle signs such as laxity of the fascial structures require more careful examination. All bruises, asymmetry between limbs, joint effusions and circulatory or neurologic changes must be carefully noted. An often forgotten question, but one with significant weight, is whether the patient felt or heard an audible crack before or after the fall. Cracks before the fall suggest pathologic fracture.

The evaluation of the etiology of the fall should be comprehensive as noted above, but holter monitoring is not indicated unless other symptoms are present.¹⁵ Likewise, CT scans and MRI scans are probably not indicated unless the history and physical suggests a specific CNS etiology since they are not screening tests.

A careful and comprehensive history and physical examination is still the most effective approach in the identification of patients at risk for and in the evaluation of patients experiencing falls. Secondary prevention should address the results of long term immobility such as muscular weakness, loss of mobility, increased risk for respiratory and urinary tract infection, bowel dysfunction, fecal impaction and the development of decubitus ulcerations as well as autonomic dysfunction with orthostasis.

SUMMARY

Increasing age leads to an increased risk for both fall and fracture. Debility sufficient to result in institutionalization may double that risk. Multiple risk factors have been identified which are clinically useful in defining individual patient's potential for fall and careful history and physical examination is sufficient to identify most of those risk factors. While falling may be an unavoidable part of a lifetime human experience, the risk of falling should be reduced and its secondary morbidity lessened with a preventive and functionally oriented approach. That approach requires minimal additional resources, but is likely to provide tremendous benefit for both individual patients and the larger society. □

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REFERENCES

1. Kelsey JL, Hoffman S. Risk factors for hip fracture. *N Engl J Med* 1987; 316: 369-70.
2. Sorock G. Falls among the elderly: Epidemiology and prevention. *Am J Prev Med* 1988, Vol 4; No 5: 282-8.
3. Melton LJ III, Riggs BL. Epidemiology of age-related fractures. In: Avioli LV, ed. *The osteoporotic syndrome*. New York: Grune & Stratton. 1983: 45-72.
4. Robbins AS, Rubenstein L, Josephson K, Schulman BL, Osterwell D, Fine G. Predictors of falls among elderly people. *Arch Intern Med* 1989; 149: 1628-33.
5. Tinetti ME, Speechley M, Ginter S. Risk factors for falls among elderly persons living in the community. *N Engl J Med* 1988; 319: 1701-7.
6. Granek E, Baker SP, Abbey H, Robinson E, Myers AH, Samkoff JS, Klien LE. Medications and diagnoses in relation to falls in a long term care facility. *J Am Geriatr Soc* 1987; 35: 503-11.
7. Campbell AJ, Borrie MJ, Spears GF. Risk factors for falls in a community-based prospective study of people 70 years and older. *J Gerontology* 1989; 44: M112-7.
8. Ray WA, Griffin MR, Schaffner W, Baugh DK, Melton LJ, III. Psychotropic drug use and the risk of hip fracture. *N Engl J Med* 1987; 316: 363-9.
9. Cumming RG, Miller CL, Kelsey JK, et al. Medications and multiple falls in the elderly people: The St. Louis OASIS study. *Age and Aging* 1991; 20: 445-461.
10. Tinetti ME, Williams TF, Mayewski R. Fall risk index for elderly patients based on number of chronic disabilities. *Am J Med* 1986; 80: 429-34.
11. Masdeu JC, Wolfson L, Lantos G, Tobin JN, Grober E, Whipple R, American P. Brain white-matter changes in the elderly prone to falling. *Arch Neurol* 1989; 46: 1292-6.
12. Brocklehurst JC, Robertson D, James-Groom P. Clinical correlates of sway in old age - sensory modalities. *Age and Aging* 1981; 11: 1-10.
13. Overstall PW, Exton-Smith AN, Imms FJ, Johnson AC. Falls in the elderly related to postural imbalance. *Br Med J* 1977; 1: 261-4.
14. Tinetti ME, Wen-Liang L, Ginter S. Mechanical restraint use and fall-related injuries among residents of skilled nursing facilities. *Ann Int Med* 1991; 116: 369-74.
15. Rosado JA, Rubenstein LS, Robbins AS, Heng MK, Schulman BL, Josephson, KR. The value of holter monitoring in evaluating the elderly patient who falls. *Am Geriatric Soc* 1989; 37: 430-4.

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Editorials

GERIATRICS, CERTIFICATION AND PRACTICE

Guest editorials reflect the opinions of the author and do not necessarily reflect the opinions of the Editorial Board or the officers and trustees of the South Carolina Medical Association.

Why did American medicine wait until the 1980s to recognize the need for certification in Geriatrics? I. L. Nascher, a New York pathologist, coined the word in 1909¹ and published the first textbook of Geriatrics in 1914.² He and many other American physicians were well known in this special field of medicine and when the British made Geriatric Medicine a specialty in 1950, they recognized the American contributions. Nevertheless, the age-defined specialties of Neonatology, Perinatology, and Adolescent Medicine were accepted in U. S. academic medical centers while a specialty in Geriatrics remained controversial. Dr. Nascher was intuitive, "Geriatrics is not an outcast; it is not a discredited branch of medicine. It has simply been neglected; passed by in a rush for branches that are more spectacular as surgery and sero- and organotherapy, or more productive economically, as Pediatrics and Obstetrics, or more promising of ultimate success, as infectious diseases and diseases of metabolism. Geriatrics promises nothing that is spectacular, little that is economically productive, and its practice must end in the ultimate defeat of the physician's endeavors, for death in old age is inevitable. But Geriatrics does promise the fullest development of the underlying principles of the medical profession, sympathy and science; sympathy to relieve distress wherever we may find it; science to study life and how to prolong it. To the physician who is imbued with these principles, this appeal to take up the study of geriatrics, should not be made in vain."³

The evolution of geriatric medicine in the United States as a certifiable entity began in

1977 when the National Institute for Aging asked the Institute of Medicine to examine teaching about aging in medical education. In 1979, the Federated Council for Internal Medicine published a position paper on the future practice of Geriatric Medicine. The role of a physician practicing primary care geriatrics, the physician consultant in geriatrics and the effect of fellowship training in geriatrics were all topics of concern for academic medicine. Although not in total agreement, the Federated Council of Internal Medicine reaffirmed the importance of Geriatrics in Internal Medicine.

The officers of the American Board of Internal Medicine and the American Board of Family Practice met in 1982 and after three years of cooperative planning, both boards announced an agreement for a certificate of added qualifications in Geriatric Medicine and for a common Geriatric examination. Through 1994, a Clinical Practice Pathway allows board certified family physicians and internists without two years of geriatric fellowship training to sit for the exam. The successful candidate is not certified as a subspecialist.

Geriatrics is a new discipline in the United States. The leadership in Family Practice and Internal Medicine forged a partnership and challenged the other specialties to consider the need for added qualifications in Geriatric Medicine. The American Board of Psychiatry and Neurology accepted the challenge and offered their initial certification exam for added qualifications in Geriatric Psychiatry in 1992.

What is the future for Geriatric Medicine?

The academic leadership of Family Practice and Internal Medicine opted for a certificate conferring added qualifications rather than a subspecialty with the hope of directing the education and practice of Geriatrics and preventing the fragmentation of medical care delivered to the rapidly growing elderly population. William Hazzard, an internist and national leader in geriatric medicine, stated, "The British decision to make Geriatrics a separate specialty in 1950 had, as a result, developed a focus of Geriatrics but at the cost of separating Geriatrics from the academic and the medical mainstream. As a result it was sadly and readily apparent that Geriatrics had become second-class medical care developed by second-class physicians in second-class facilities for second-class citizens."⁴ Now, we are starting in the mainstream but the severe shortage of teaching faculty for the support of the clinical and educational programs in Geriatrics at most of our academic health centers offers a daunting challenge.

High quality care for the 75 and over population will require many more geriatricians in academic medical centers and in the community providing consultative and primary care for the increasing number of elderly patients. In this century, most of the care for the elder-

ly will be provided by our adult primary care practitioners. Education in Geriatrics and Gerontology is a maturing concept in academic medical centers.

Our future system of geriatric care will depend on the reimbursement system, the national economy, the ethics of health care rationing and most of all, public demand. Looking to the future, I hope we follow Nascher's advice and fully develop the underlying principles of the medical profession, sympathy and science.

Allen H. Johnson, M. D.
Department of Medicine
Medical University of South Carolina
171 Ashley Avenue
Charleston, SC 29425-2220

REFERENCES

1. Nascher, IL: Geriatrics. New York Med J. 90:358-59, 1909.
2. Nascher, IL: Geriatrics. Philadelphia: P. Blackiston's Son & Co., 1914.
3. Nascher, IL: The neglect of geriatrics. Interstate Medical Journal. 24:592-97, 1917.
4. Hazzard, WM: Evermore in the mainstream - Differential approaches at the University of Washington, Johns Hopkins University, and Bowman Gray School of Medicine. In Aging- New dimensions and opportunities for educational institutions in the health sciences. October 27, 1989; Washington, D.C. American Geriatrics Society, 1990; p. 5-10.

TITIAN 1484?–1576

"THE ALLEGORY OF PRUDENCE"

Near the end of his career (c. 1565), Titian produced this final tribute to the doctrine of the "three ages of man." Throughout history there have been many different schemes for petitioning man's life span. Perhaps the most popular division was that of four periods: infancy, adolescence, maturity, and old age—neatly corresponding to the four divisions in the day, the four seasons of the year, the four humors, the four elements, etc. Shakespeare, of course, describes so effectively seven ages.

Titian's three ages, represented by the three heads (with the aged head being a portrait of the artist), can be equated with the past, present, and future, represented by the beast's heads. Youth, like the future, abounds in potentialities not yet realized; adulthood, like the present, combines both the potential and

the actual; and old age, like the past, with remembrance of things past. The Latin inscription explains the relationships of the three ages of man as well as the three forms of time: the present learns from the past and acts with due regard to the future.

Grow old along with me!

The best is yet to be,

The last of life, for which the first
was made.

Our times are in his hand.

R. Browning: "Rabbi Ben Ezra"

Betty Newsom

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SEASON'S GREETINGS

During this holiday season, it is well to pause and reflect upon our mission as healers. Too often we are caught up in the many problems which face us, and we fail to realize how much we have for which we can be thankful. We are printing below, as our holiday message to you, the text of the Invocation given by W. Curtis Worthington, Jr., M. D., at the opening of the House of Delegates meeting on Sunday, May 3, 1992.

Bartolo M. Barone, M. D., *President*

Let us pray. Almighty God, our heavenly father, through whose divine will we aspire to wisdom, through whose grace we are moved to compassion, and through whose guiding hand only can be found the power to heal, we ask Your blessing on the members of the South Carolina Medical Association here gathered that they may address themselves to the many complex and difficult issues with which they will have to contend, in conformance with Your divine will.

We ask that You bestow upon them depth of understanding, clarity of vision and diligence of mind so that they may order the business of this day to the benefit of the people that in Your wisdom You have placed in their professional charge.

Where they are right, strengthen their resolve; where they are in doubt, guide them; where they are in error, return them to the right path.

We ask Your blessing on the leaders of this association, past and present, and especially those who will assume authority at this meeting. We ask that You give them strength and insight to so address the critical issues which beset their constituency and that successful resolutions may be found; and that this profession, and through it the people of this state, may be well served.

We also ask Your divine mercy on the sick and all those who suffer in mind, body or spirit, that they may be relieved of their burden, especially those to whom it falls the responsibility of those here assembled to minister.

And, we finally ask that You bestow Your wisdom and guidance on the leadership of this state, in business, in all of the professions, and in policies, that their roles in the pursuit of quality health care for all who are in need of it may be carried out with equity and success.

We ask this in Your holy name. Amen.

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HYPERKALEMIA: MECHANISMS, ETIOLOGY, AND TREATMENT

ARTHUR V. WILLIAMS, M. D.*

Potassium is the most abundant cation present in intracellular fluid and is crucial to the normal workings of the cell and hence of the whole organism. The steep concentration gradient across cells accounts for many of their electrical characteristics such as impulse generation and transmission of nerves and cardiac pacemakers and contraction of muscle fibers.¹

Clinical problems related to altered potassium levels in body fluid compartments are common and their solution requires a working knowledge of factors affecting potassium homeostasis.

MECHANISMS OF MANAGEMENT

In 1960 Robert W. Berliner summarized renal potassium management.² Investigation since that time has expanded and confirmed his concepts:

- (1) While potassium is filtered by the glomerulus, almost all of it is reabsorbed in the proximal tubule and the ascending limb of Henle.
- (2) Potassium is secreted by distal tubular

cells. Urinary potassium is derived from this secretory process.

- (3) The secretion of potassium into the distal tubule is in exchange for sodium which is actively transported from the distal cell to the peritubular fluid. Movement into urine is down an electrical gradient generated when positively charged sodium moves out leaving a negative charge to attract potassium.

The secretion of potassium is constant through a wide range of intratubular sodium concentrations but varies directly with distal delivery determined by luminal flow rate.³ Potassium loss with use of a loop diuretic is secondary to increase in this distal flow rather than to increase in concentration of sodium in tubular fluid.

Final movement of potassium from the cell to the lumen is due to the negative luminal charge consequent to positively charged sodium's movement into the cell. The diuretic amiloride blocks sodium reabsorption abolishing this negative charge thus accounting for its potassium sparing action.

Peritubular factors affecting secretion of potassium are its concentration, acid-base status and hormones.

A minor increase in plasma potassium markedly accelerates its secretion. Persistent

*Address correspondence to Dr. Williams at the Department of Medicine, Medical University of South Carolina, 171 Ashley Avenue, Charleston, SC 29425-2227.

hyperkalemia after oral or parenteral administration, therefore, is evidence of a defect in its secretion or cellular uptake.

Excretion of potassium is influenced by hydrogen ion activity in extracellular fluid, being inhibited by acidosis and accelerated by alkalosis.⁴

Potassium is transported from peritubular fluid across the epithelial cell and into the cytoplasm by a pump that simultaneously moves sodium in the opposite direction from cytoplasm into extracellular fluid. This pump consists of units of sodium-potassium ATPase that are dependent upon the hydrolysis of ATP as an energy source. These units are in highest concentration in the distal convoluted and cortical collecting tubules, the major sites of potassium secretion. It is of interest that such solute movement in the kidney accounts for 10 percent of total oxygen consumption although these organs account for less than one percent of body mass.⁵

It is well known that high levels of aldosterone facilitate secretion of potassium and hypokalemia and low levels of aldosterone the reverse. Its major mode of action is by increasing the number of Na-K ATPase pump units in cortical collecting duct cells. Aldosterone action is modified by other hormones such as triiodothyronine, prolactin and corticosteroids as well as by a digoxin like substance found in uremic serum.⁶

Serum levels of potassium depend not only on distal tubular secretion but also on changes in distribution across cell membranes dependent upon a variety of mechanisms.

Insulin enhances cellular uptake without changing renal management.⁷ This effect is independent of glucose levels. However, the osmotic effect of hyperglycemia may cause a shift of water containing potassium from cells and exacerbate hyperkalemia.⁸ Epinephrine infusion is followed by lowering of serum potassium. As with the administration of any beta adrenergic drug the mechanism is intracellular displacement, this unrelated to insulin or aldosterone.⁹ Aldosterone increases potassium tolerance in nephrectomized rats and, in

addition to its function in renal regulation of potassium, plays an important role in extrarenal regulation of serum potassium levels. Presumably this, too, is secondary to intracellular movement, but increased intracellular potassium levels after aldosterone administration have not been routinely demonstrated.¹⁰

In acidosis due to mineral acid serum potassium tends to increase as pH falls (0.6 mEq increase with each 0.1 fall in pH). However, this change does not occur in the presence of organic acid (such as lactic) acidosis and is minimal to absent with other acid-base entities. It seems clear that the relationship is not a simple buffering exchange, potassium for hydrogen, but that it is influenced by serum bicarbonate, the specific anion, adrenergic activity, change in potassium excretion or other factors.¹¹

Elevation of serum bicarbonate may decrease serum potassium without change in pH since the bicarbonate ion per se facilitates the transcellular distribution of potassium.¹²

Calcium acts on membrane potential to mitigate potassium toxicity without influence on serum levels. Protection is mediated through a change in cell membrane permeability to sodium. In dogs injected with potassium alone death is reported to occur at a serum level between 10 and 20 mEq/L. With infusion of a mixture of potassium and calcium death occurs at higher levels, in one dog 69.4 mEq/L.¹³

These complex relationships have been of interest since the landmark work of Sidney Ringer in 1882 demonstrating the effects of varying mixtures of potassium, calcium, and bicarbonate on cardiac contraction.¹⁴

SYMPTOMS AND SIGNS OF TOXICITY

Muscle contraction is dependent upon the relationship between the concentration of potassium inside and outside the muscle cell. A rise in extracellular potassium decreases this ratio, the muscle membrane resting potential and the strength of contraction. Weakness and paralysis may result. Involve-

ment of cardiac muscle and conducting system pose by far the greatest threat to the patient. This is characterized by a well known series of electrocardiographic changes beginning with peaked T waves followed by P wave depression, QRS widening, abnormalities in A-V conduction and, terminally, asystole or ventricular fibrillation. These changes are seen at lower potassium levels if hypocalcemia, hyponatremia or metabolic acidosis are also present. Skeletal muscle weakness also occurs, beginning in the lower extremities but cardiac toxicity dominates the clinical picture.

Potassium poisoning is rare in the presence of normal kidney function since a small increase in serum potassium markedly augments potassium excretion. In addition the increase in the concentration of serum potassium following ingestion or injection is less than would be expected if its distribution were purely extracellular.¹⁰ The process of protection against hyperkalemia is almost certainly due to rapid displacement of potassium from extracellular fluid to intracellular, this movement mediated by aldosterone. As previously noted this has been difficult to confirm by measurement of intracellular levels.

ETIOLOGY

In spite of these protective mechanisms the risk of acquiring hyperkalemia in the course of hospitalization is usually reported as one to two percent of all patients and has been reported as high as 10 percent. The chief offender has been potassium chloride supplements but hyperkalemia may also be seen with the use of salt substitutes (that contain 10 to 13 mEq of potassium per gram) or nutritional protein-calorie supplements. Intoxication has been reported with poor mixing of potassium chloride injected into a plastic bag containing fluid.

Potassium rise is also seen with potassium sparing diuretics (amiloride, triamterene, spironolactone) that decrease distal secretion.

Converting enzyme inhibitors decrease gen-

eration of angiotensin II. The stimulation to adrenal production of aldosterone is lost with subsequent hyperkalemia. In this case the tendency toward hyperkalemia is increased if renal function is decreased. Beta blocking agents inhibit translocation to intracellular fluid with usually mild hyperkalemia. Digitalis inhibits Na-K-ATPase when used in very large doses. Drugs causing tumor lysis or rhabdomyolysis may be at fault.¹⁵

Nonsteroidal antiinflammatory drugs are of particular interest since they are the most frequently prescribed drug group. In normal human beings or animals renal blood flow is not impaired by inhibition of prostaglandin synthesis. In contrast inhibition of synthesis has profound consequences when superimposed on previous hemodynamic insult. In the presence of renal disease when vasodilation by prostaglandins is compensatory for loss of nephrons, blockade of biosynthesis could cause a further fall in glomerular filtration rate.

Papillary necrosis has been reported with ibuprofen and other NSAIDS and has occurred with their use in combination with other medications. However, their long term use has not been reported as a cause of chronic renal failure in humans. Reports of renal injury are confused by the presence of variables such as the possibility of underlying disease and the concomitant use of other medications. The nephrotic syndrome with intact glomeruli and evidence of tubular damage has occasionally been reported as well as water and sodium retention.¹⁶ In addition, hyperkalemia secondary to hyporeninemic hypoaldosteronism has been recognized as a reversible complication of NSAID use.¹⁷

Hyperkalemia associated with metabolic acidosis is not uncommon in the presence of diabetic nephropathy, interstitial nephritis or hypertensive renal disease. Most patients have decreased basal aldosterone levels as well as decreased aldosterone response to stimuli including that of potassium. This suggests that the problem is adrenal rather than renal. In diabetics, adrenal dysfunction may

follow insulin deficiency with low intracellular potassium levels in aldosterone-secreting cells. However, aldosterone levels and responses may be normal, as in the sickle cell kidney. In this case a tubular defect with failure to respond to aldosterone is thought to be present. Patients with this entity may be asymptomatic and hyperkalemia is usually discovered with routine laboratory examination.⁴

Hyperkalemia accompanies acute renal failure from any cause, particularly when associated with trauma as described in the "crush syndrome" caused by crushing injuries from falling masonry in London during WW II. In this instance there is addition of potassium to ECF from traumatized cells as well as failure of excretion.¹⁸ This description of reversible acute renal failure was a major stimulus to the investigation of the causes and treatment of hyperkalemia as well as to the development of hemodialysis.

Acute renal failure may be seen in a variety of clinical settings with glomerular, tubular, or interstitial damage ranging in cause from Angiitis to Zylprim sensitivity.

TREATMENT

A survey of 65 nephrology program training directors recommended first choice therapy with intravenous calcium gluconate or sodium bicarbonate or both, with glucose and insulin for intermediate use. Hemodialysis is the treatment of choice with persistent hyperkalemia. None recommended polystyrene sulfonate as first choice and only 10 percent for second. None suggested nasogastric suction or peritoneal dialysis as treatment options.¹⁹

Initial treatment is with calcium gluconate administered intravenously rapidly as a 10 percent solution, in a dose of 10 to 20 ml. Improvement in clinical and electrocardiographic evidence may occur quickly without change in potassium concentration.

Bicarbonate may then be given in a dose of 50 mEq intravenously which decreases hydrogen ion concentration and allows potassium to move from extracellular fluid into

cells. In addition bicarbonate promotes intracellular movement of potassium even if pH is constant.¹² Increase in sodium ion *per se* improves contraction in isolated myocardial cells. If hyponatremia is not corrected by the use of sodium bicarbonate the cautious use of hypertonic saline may be considered.

Insulin, 20 units, is administered with 50 grams of glucose over a one hour time period. Intracellular translocation of potassium is the consequence of direct stimulation of Na-K-ATPase. Liver uptake is responsible for 70 percent of cellular uptake, with muscle and adipose tissue responsible for the rest.²¹

Albuterol 0.5 mg i.v. may significantly and quickly reduce serum potassium with no side effect other than tachycardia.²² Use of this beta 2 agonist is usually unnecessary following treatment with calcium gluconate and bicarbonate.

Fludrocortisone acetate 0.1 to 0.4 mg twice daily is indicated in the presence of hyporeninemic hypoaldosteronism most frequently seen with diabetic nephropathy. If this is followed by salt retention furosemide is helpful as a diuretic that also increases potassium excretion. A sodium potassium exchange resin may be used but most patients find this difficult to tolerate.

If hyperkalemia persists hemodialysis is indicated. Peritoneal dialysis is a satisfactory method for long term control but potassium clearance is relatively low and it is second choice when time is critical.

SUMMARY

Hyperkalemia may follow failure of glomerular filtration or tubular secretion of potassium. Tubular secretory failure may be secondary to deficient aldosterone or tubular insensitivity to this hormone. In either case glomerular insufficiency magnifies the problem. Increased potassium intake alone is a rare cause of increased serum potassium.

The well recognized sequential treatment of hyperkalemia is reviewed.

Most important is the establishment of the cause of hyperkalemia as these emergency

measures are being taken. A history of drug intake, establishment of the acid-base status of the patient and the presence of underlying disease must be ascertained.

The management of hyperkalemia remains an intriguing challenge in the office and hospital practice of medicine. □

REFERENCES

1. Field MJ, Berliner RW, Giebisch GH. Regulation of renal potassium metabolism (Clinical disorders of fluid and electrolyte metabolism, McGraw-Hill, 1987). Maxwell MH, Kleeman CR, Narins RG.
2. Berliner RW. Renal mechanisms of potassium excretion. The Harvey Lecture Series 55. Academic Press N.Y. 1961:141.
3. Wright FS. Flow dependent transport processes: filtration absorption, secretion. *Am J Phys* 1982; 243:F1-11.
4. DeFronzo, RA. Hyperkalemia and hyporeninemic hypoaldosteronism. *Kid Int* 1980; 17:119-34.
5. Gullans SR, Hebert SC. The metabolic basis of ion transport. The Kidney. 4th ed. 1991, Brenner BM and Rector, FC. W.B. Saunders Co.
6. Doucet A. Function and control of Na-K-ATPase in single nephron segments of the mammalian kidney. *Kid Int* 1988; 34:749-60.
7. Silva P, Brown, Ebstein FH. Adaptation to potassium. *Kid Int* 1977; 11:466-75.
8. Brown, RS. Extrarenal potassium homeostasis. *Kid Int* 1986; 30:116-27.
9. Gifford JD, Rutsky EA, Kirk KA, McDaniel HG. Control of serum potassium during fasting in patients with end stage renal disease. *Kid Int* 1989; 35:90-4.
10. Alexander EA, Levinsky NC. An extrarenal mechanism of potassium adaptation. *The J of Clin Invest* 1968; 47:740-48.
11. Androgue HJ, Madias NE. Changes in plasma potassium during acute acid-base disturbances. *Am J Med* 1981; 71:456-67.
12. Fraley D, Adler S. Correction of hyperkalemia by bicarbonate despite constant blood pH. *Kid Int* 1977; 12:354-360.
13. Winkler AW, Hoff HE, Smith PK. The toxicity of orally administered potassium salts in renal insufficiency. *J Clin Invest* 1941; 20:119-26.
14. Ringer S. A further contribution regarding the influence of the different constituents of the blood on the contraction of the heart. *J. Physiol* 1882; 4: 29-42.
15. Ponce PS, Jennings AE, Madias NE, Harrington JT. Drug-induced hypokalemia. *Medicine* 1985; 64, No 6:357-70.
16. Clive DM, Stoff JS. Renal syndromes associated with nonsteroidal antiinflammatory drugs. *N Eng J Med* 1984; 310, No. 9:563-72.
17. Tan SY, Shapiro R, Franco R, Stockard H, Mulrow PH: Indomethacin induced prostaglandin inhibition with hyperkalemia. *An Int Med* 1979; 90: 783-85.
18. Bywaters EGL, Beall D. Crush injuries with impairment of renal function. *Brit Med J* 1941; 1: 427-32.
19. Iqbal I, Freedman EA. Preferred therapy of hyperkalemia in renal insufficiency: Summary of nephrology training program directors. *N E J Med* 1989; 20:60-61.
20. Ballantyne F III, Davis LD, Reynolds EW. Cellular basis for reversal of hyperkalemic electrocardiographic changes by sodium. *Am J Phys* 1975; 229, No.4:935-40.
21. Salem MM, Rosa RM, Batlle DC. Extrarenal potassium tolerance in chronic renal failure; implications for the treatment of acute hyperkalemia. *Am J Kid Dis* 1991; 18:421-440.
22. Montoliu J, Lens X, Revert L. Potassium lowering effect of albuterol for hyperkalemia in renal failure. *Arch Int Med* 1987; 147:713-17.

TREATMENT OF EARLY BREAST CANCER WITH LIMITED SURGERY AND RADIATION THERAPY*

RALEIGH J. BOULWARE, M. D.**

LINDA BYARS, R. N.

WILLIAM J. NEGLIA, M. D.

DIANE W. TRUESDALE, M. D.

INTRODUCTION

Treatment of early breast cancer continues to be an emotional and controversial subject among patients as well as physicians. During the 80s and 90s, major changes in the diagnosis and treatment of breast cancer have occurred. With the advent of mammography, breast cancer can be diagnosed more frequently in the earlier stages allowing patients to have alternatives regarding the management of Stages I and II breast cancer. Numerous retrospective and prospective studies have demonstrated the usefulness of conservative management of early breast cancer as a curative alternative with excellent local control. This has translated into comparable cure rates when compared to the more standard approach, namely the modified radical mastectomy.^{1,2,3,4,5} There may also be positive psychological or psycho-emotional benefits from breast preserving cancer therapy. With comparable local control and cures and a highly acceptable cosmesis, patients will be encouraged to seek medical attention earlier. This ultimately will lead to improving the overall success or cure for this disease. This study analyzes the results of limited surgery and radiation therapy at a community based teaching hospital and cancer center (Center for Cancer Treatment and Research at Richland Memorial Hospital). Our aim is to compare our results with others and to encourage

this modality as a comparable alternative in the management of early breast cancer.

MATERIALS AND METHODS

Between January 11, 1980, and October 11, 1989, there were 184 patients with breast cancer treated in the Department of Radiation Oncology at Richland Memorial Hospital. During that time, 94 patients had limited surgery such as lumpectomy, tylectomy, tumorectomy, or wide local excision with negative margins. Radiation therapy was the primary form of treatment for their breast cancer. The types of incisions varied. Most had a total removal of the entire gross tumor, or lump, with clear margins. Re-excision of the lumpectomy site was indicated when margins were positive or close. The idea, however, was to remove as little normal tissue as possible and obtain clear pathological margins. T-3 and T-4 tumors (tumors more than 5.0 cm. in greatest dimension or tumor of any size with direct extension to the chest wall or skin) were excluded from the study leaving 84 patients to make up the study population. Other patients felt to be unsuitable for conservative surgery and radiation included those with multicentric or multifocal disease, diffuse microcalcifications, or patients with intraductal carcinoma where more than 40 percent of the specimen was preinvasive. Although obese patients or those with large pendulous breasts had a less than optimal result, they were not excluded from consideration. Young age (less than 45 years of age) was not a contraindication. Patients with dis-

*From the Center for Cancer Treatment and Research, Richland Memorial Hospital, Columbia, SC.

**Address correspondence to Dr. Boulware at 5 Richland Medical Park, Columbia, SC 29203.

tant metastasis were not eligible for this study. All patients were referred from a surgical or medical oncologist after the diagnosis was confirmed histologically (Table 1). Fifty-three patients presented with a palpable mass and 48 patients had positive findings on mammograms. After referral to the Department of Radiation Oncology, all patients underwent a complete history and physical examination. The workup included a chest x-ray, CBC, and liver function studies. In the earlier years of this study most patients also had a baseline bone scan. All patients began treatment between two to four weeks after surgery depending upon the time necessary for wound healing.

All patients were treated on a super voltage Linear Accelerator after a simulation process. The simulation consisted of immobilizing the patient and taking appropriate measurements and patient contours from which isodose curves were generated from a treatment planning computer. Following the simulation process, the patient underwent a series of treatments which consisted of 45-50 Gy in 25-28 fractions. All patients were treated through medially and laterally opposed wedged portals to the breast. Patients with tumors in the central or inner quadrants of the breast irrespective of the nodal status also had their internal mammary lymph nodes treated. All patients with positive nodes regardless of location had not only the internal mammary lymph node chain treated but also the supra-clavicular nodal chains as well. In the latter part of the study period, separate internal mammary fields were no longer used, and whenever possible the internal mammary lymph nodes were included in the tangential breast portals. Meticulous efforts were made to minimize the amount of lung irradiated in this breast and internal mammary lymph node portal. Following the radiation to the breast the excision scar was boosted an additional 7.7-10.0 Gy with superficial electrons. During the course of radiation therapy all patients were seen at least weekly to assess tolerance of the therapy and to address any treatable

TABLE 1.
HISTOLOGY

Infiltrating Ductal	= 56
Intraductal	= 11
Medullary Carcinoma	= 2
Lobular Carcinoma in Situ	= 1
Intracystic Papillary	= 1
Adenocarcinoma	= 3
Colloid Carcinoma	= 2
Tubular Carcinoma	= 2
Papillary Carcinoma	= 4
Infiltrating Lobular	= 2

side effects. In addition, all patients underwent a weekly CBC. At the completion of treatment, patients were given instructions regarding proper skin care. The first follow-up was two to three weeks after completion of treatment and every three to six months thereafter. The patients were eventually directed back to their referring physicians for primary followup and reevaluation.

TABLE 2
DISTRIBUTION BY STAGE

	<u>N0</u>	<u>N1</u>
T1	58	8
T2	14	4

RESULTS

The majority of patients in this study had T-1 N-0 lesions (Table 2). Seventy-four per cent of all patients are alive with a mean follow-up of 54.2 months after treatment. Ninety-three percent of T-1 and 88 percent of T-2 lesions have their disease controlled locally with or without distant metastasis (Table 4). There were six local failures. There was one failure in the group of 11 with intraductal carcinoma (local control of 91 percent). Because of the small number of patients in our study with local failure (with or without distant metastasis), we were unable to relate local failure to tumor size, the amount of in situ carcinoma, closeness of margin, or other factors. The majority of patients experienced either mini-

TABLE 3
STATUS OF DISEASE

	<u>Number of Patients</u>	<u>Alive</u>	<u>Dead</u>
Chemotherapy	17	7 (40)	10 (60)
No Chemotherapy	67	53 (80)	24 (20)

() Denotes %

mal or moderate erythema as well as some form of mild desquamation during the course of therapy. Almost all patients had clearing of these symptoms during the post treatment period.

Eighty-three per cent had a favorable cosmetic result. The majority had an excellent cosmetic result with 17 percent being unfavorable. An excellent result is defined as the treated breast appearing no different from the untreated breast. A good result is one with minimal asymmetry or dimpling and only minimal retraction. A poor cosmetic result is one in which the physician and patient were unhappy about the outcome due to retraction, edema, or general distortion of the breast. Patients are deemed favorable if they are graded as excellent or good. Those that were unfavorable had a poor cosmetic result. The majority of the patients received no additional therapy, namely chemotherapy, and 80 percent are alive without evidence of disease (Table 3).

DISCUSSION

Treatment of early breast cancer has continued to evolve over the past 30 to 40 years. The radical mastectomy was replaced by the modified radical as a primary form of therapy

until recently when numerous studies demonstrated the efficacy of even less surgery, namely lumpectomy and radiation therapy as a comparable approach for early breast cancer.^{3,4,5,6} Seventy-four percent of our patients are alive with a mean follow-up of 54.2 months, and this compares favorably with the five year NED survival of other non randomized studies. Amalric¹⁰ with 1,099 patients with Stage I and Stage II disease reports a 72 percent five year survival. Montague,¹¹ from M.D. Anderson, in two different studies reports 78 percent and 85 percent five year results. Rissanen,¹² et al, with 415 patients has five year NED survival of 79 percent. Our local control of 93 percent is better than that reported by Amalric of 80 percent and similar to that of Montague with 94 and 95 percent. Harrison,¹³ et al., at the Joint Center for Radiation Therapy at the Harvard Medical School reports local controls of 97 percent for Stage I and 87 percent for Stage II. Our lower percentage of favorable cosmetic result probably reflects the evolving surgical and radiation therapy techniques over the time period of our study. Our 91 percent local control in 11 patients with in situ carcinoma is similar to what has been reported by others.⁷ Most feel that when the intraductal carcinoma makes up

TABLE 4
LOCAL CONTROL

Local Control Without Distant Metastasis	<u>Local Control With</u> <u>Distant Metastasis</u>		<u>Overall Local</u> <u>Control %</u>	<u>Local</u> <u>Failure</u>
	<u>N0</u>	<u>N1</u>		
T1	43	8	93%	4
T2	8	6	88%	2

more than 25 to 50 percent of the biopsy specimen, the local control is less than when a smaller percentage of the intraductal component is present. It is generally felt that a moderate amount of intraductal component in the specimen implies a higher tumor burden throughout the remaining breast which would lead to a higher likelihood of local failure.

Major institutions in the United States and Europe have helped in the gradual transition from an almost exclusively mastectomy treated disease to one where breast preservation is becoming more accepted. In 1985 approximately 25 percent of all patients underwent breast conservative surgery. The 1990 NIH consensus conference on early breast cancer addressed the issue of breast conservative treatment and concluded that it is an appropriate method of primary therapy for the majority of women with Stage I and Stage II breast cancer and is preferable because the survival rates are equivocal to those of total mastectomy and axillary dissection by preserving the breast.⁸

Psychological or psycho-emotional distress associated with cancer therapy varies with the type of procedure. Radical surgery produces anxiety in terms of body image, physical attractiveness, and sexuality, whereas, lumpectomy and XRT may cause worries about recurrence and adverse effects of radiation.¹⁴ The fear of recurrence, however, is similar in patients undergoing mastectomy and/or breast conservative surgery. Twenty-two percent of our patient population during the study period underwent this kind of therapy. This is in line with how patients are treated in the Southeast.⁹ Whether distance to the treatment facility is a factor in the decision as to how patients are treated could not be established. It is anticipated that the percentage of patients treated with limited surgery and radiation in the Carolinas and Southeast will continue to increase through the 90s. □

REFERENCES

1. Swanson GM, Satavi ER: Trends in conserving treatment of invasive carcinoma of the breast in females. *Surg Gynecol Obstet* 171:465-471, 1990.
2. Veronesi, Salvador B, et al: Conservative treatment of early breast cancer. *Ann Surg* 211:250-259, 1990.
3. Fisher B, Redmond C, Poisson R, et al: Eight-year results of randomized clinical trial comparing total mastectomy and lumpectomy with or without irradiation in the treatment of breast cancer. *New Engl J Med* 320:822-828, 1989.
4. Veronesi U, Banfi A, Del Vecchio M, et al: Comparison of Halsted mastectomy with quadrantectomy, axillary dissection, and radiotherapy in early breast cancer: Long-term results. *Eur J Cancer Clin Oncol* 22:1085-1089, 1986.
5. Sarrazin D, Le MG, Arriagada R, et al: Ten-year results of randomized trial comparing a conservative treatment to mastectomy in early breast cancer. *Radiother Oncol* 14:177-184, 1989.
6. Sarrazin D, Le MG, Fontaine MF, Arriagada R: Conservative treatment versus mastectomy in T1 or small T2 breast cancer—a randomized clinical trial. In J Harris, S Hellman and W Silen, eds. *Conservative management of breast cancer*. 101, 1983.
7. Solin LJ, Recht A, et al: Ten-year results of breast conserving surgery and definitive irradiation for intraductal carcinoma (ductal carcinoma in situ) of the breast. *Cancer* 65:2497-2502, 1990.
8. Treatment of early-stage breast cancer—NIH Consensus Conference. *JAMA* 265:391, 1991.
9. Osteen R, Steele G: Regional differences in survival management of breast cancer. *Ca-A J for Clinicians* 42:39-43, 1992.
10. Amalric R, Santamaria F, Robert F, et al: Radiation therapy; with or without primary limited surgery for operable breast cancer. *Cancer* 49:30-34, 1982.
11. Montague ED: Conservative surgery and radiation therapy in the treatment of operable breast cancer. *Cancer* 53:700-704, 1984.
12. Rissanen PM: A comparison of conservative and radical surgery combined with radiotherapy in the treatment of Stage I carcinomas of the breast. *Br J Radio* 42:423-426, 1969.
13. Harris JR, Hellman S: The treatment philosophy, technique and results of primary radiation of early breast cancer at the Joint Center for Radiation Therapy. In Ames PR, Blumenschein GR, Montague D, (eds): *Current controversies in breast cancer*. Austin, University of Texas, Press, 1983.
14. Bartelink H, Van Damm F, Van Dongren J: Psychological effects of breast conserving therapy in comparison with radical mastectomy. *Int J Radiat Oncol Biol Phys* 11:381-385, 1985.

IMMOBILIZATION HYPERCALCEMIA IN AN ADULT PATIENT WITH PANCREATITIS AND SEPSIS: CASE REPORT*

BRUCE B. LATHAM, M. D.**

JURAJ OSTERMAN, M. D., PH. D.***

TU LIN, M. D.,

HOWARD R. NANKIN, M. D.

Immobilization is an uncommon or under-reported cause of hypercalcemia in adults. Hypercalcemia may occur in immobilized adults who also have conditions which cause high rates of bone turnover, such as Paget's disease or hyperthyroidism.¹ It has been reported less frequently in adults with other causes of immobilization, such as spinal cord injury,² peripheral neuropathy,³ and sepsis.⁴ We report an adult patient who developed persistent hypercalcemia while bedridden for more than three months with pancreatitis and sepsis.

CASE REPORT

A 40-year-old man with a long history of alcohol use was admitted to the Dorn Veterans' Hospital in October, 1990 with severe pancreatitis. Because of persistent fever and leukocytosis despite two weeks of broad-spectrum intravenous antibiotic therapy, a computed tomographic study of his abdomen was obtained revealing a large pancreatic abscess. On the 16th hospital day, he underwent a celiotomy with drainage of this abscess. His postoperative course was stormy,

with continued fever and marked leukocytosis. He also required continued ventilatory support. On the 27th hospital day he underwent surgical re-exploration of the abdomen with drainage of a collection of pus and placement of two percutaneous drains. After surgery he developed adult respiratory distress syndrome (ARDS), and remained ventilator-dependent. He required a tracheostomy on the 48th hospital day. He remained ventilator-dependent until the 85th hospital day.

Admission laboratory studies showed a serum calcium of 6.9 mg/dl (normals 8.7-10.7 mg/dl), albumin 2.2 g/dl (normals 3.5-5.3 g/dl), and phosphorous of 1.0 mg/dl (normals 2.6-4.9 mg/dl). Serum calcium corrected for his hypoalbuminemia was 8.3 mg/dl. He remained bedridden from admission until the 98th hospital day. Beginning on the 21st hospital day, he developed persistent hypercalcemia (Figure 1).

He had no known past history of malignan-

*From the Medical Service, WJB Dorn Veterans' Hospital, Columbia, SC, and the Department of Medicine, University of South Carolina School of Medicine, Columbia, SC.

**Current Address: Greenville Memorial Medical Center, Department of Internal Medicine, Greenville, SC 29605.

***Address correspondence to Dr. Osterman at the Department of Medicine, Administration Building #28, University of South Carolina School of Medicine, Columbia, SC 29208.

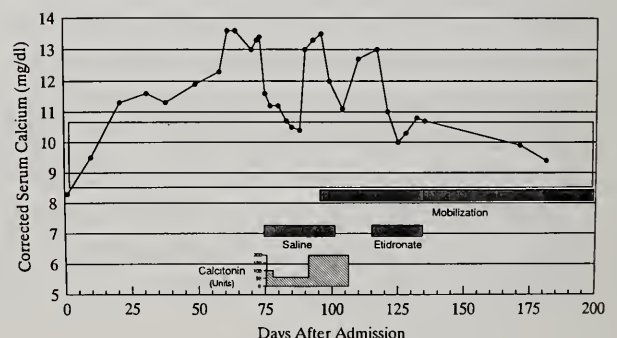


Figure 1. Serum calcium levels during the course of treatment.

cy, hyperparathyroidism, use of thiazide diuretics or calcium-containing antacids. Beginning on the 9th hospital day, he received peripheral parenteral nutrition, and later total parenteral nutrition, daily until his 93rd hospital day. He received from 2,400 to 3,000 ml of parenteral nutrition per day. Each liter of parenteral nutrition contained 5 mEq of calcium gluconate. In addition, the patient received 10 ml daily of a standard intravenous multivitamin formulation, which contained 10 mcg of ergocalciferol (equivalent to 400 USP units).

We first evaluated the patient during his 9th hospital week. At that time his serum albumin was 2.0 g/dl, calcium was 11.4 mg/dl (calcium corrected for hypoalbuminemia was 13.0 mg/dl), and phosphorous was 2.9 mg/dl. Intact PTH by immunoradiometric assay (Nichols Laboratories) was 6 pg/ml (normals 10-65 pg/ml), 1,25-dihydroxy vitamin D3 was less than 5 pg/ml (normals 20-76 pg/ml), and calculated creatinine clearance was 69 ml/minute with a concurrent blood urea nitrogen of 46 mg/dl and creatinine of 1.7 mg/dl. Urine calcium excretion was 435 mg/24 hours. Thyroid function tests were normal. Serum protein electrophoresis and urine immunoelectrophoresis were also normal.

Intravenous saline was begun, in addition to continuing his parenteral nutrition. Because the patient's hypercalcemia did not respond to the additional intravenous fluid, he was treated with salmon calcitonin, 50 MRC units every 12 hours. His serum calcium promptly fell, and the dosage of calcitonin was decreased two days later to 50 MRC units daily. His corrected calcium remained normal until the 90th hospital day, when it again became moderately elevated (13.0 mg/dl). The dosage of calcitonin was increased to 100 MRC units every 12 hours. Total parenteral nutrition was discontinued on the 92nd hospital day, as the patient was now taking nutrition well by mouth. He first began limited ambulation on the 96th hospital day. Calcitonin was discontinued on the 104th hospital day (corrected calcium = 11.2 mg/dl)

when the patient's daily periods of ambulation gradually increased. However, his calcium again promptly increased. On the 115th hospital day he was started on intravenous etidronate, 500 mg given over two hours daily for five days, after which he was switched to 200 mg every 12 hours by mouth. His calcium again promptly normalized, and the etidronate was discontinued on the 133rd hospital day. He was now freely ambulating in the hospital halls, and was on no medications. After discharge from the hospital, his calcium remained in the normal range when checked intermittently as an outpatient.

DISCUSSION

Immobilization hypercalcemia occurs in 11 to 50 percent^{5,6,7} of younger patients with spinal cord injuries, presumably due to the higher rate of bone turnover in young individuals. In adults, hypercalcemia due to immobilization appears to be less common or is under-reported. Hypercalcemia may develop several weeks⁷ to several months⁸ after the onset of immobilization. In affected individuals, bone biopsies reveal a reduction in bone formation with mildly increased bone resorption.⁹ The etiology of increased bone resorption is uncertain, but appears to be related to reduced weight bearing. This results in loss of calcium from bone, hypercalcemia, and hypercalciuria. Hypercalciuria may result in calcium oxalate nephrolithiasis and a reduction in renal function and calcium excretion, further worsening the hypercalcemia.⁷ PTH and 1,25-dihydroxy vitamin D3 levels are suppressed, with a subsequent decrease in intestinal calcium absorption.⁸ Our patient's clinical course and laboratory studies are consistent with immobilization-related hypercalcemia.

The most effective treatment for hypercalcemia of immobilization is resumption of active weight bearing.¹⁰ Passive range of motion exercises are not effective.⁷ Intravenous saline may not be effective and is inconvenient for long-term treatment.¹¹ Calcitonin therapy does acutely lower serum calcium in these patients, but is associated with a

loss of effectiveness over time, despite increased dosage.^{11,12} Biphosphonates inhibit bone resorption and have been used effectively to treat patients with hypercalcemia of immobilization. Etidronate, and most recently, pamidronate, are approved for use and treatment of hypercalcemia of malignancy in the United States (at the time of treatment of our patient, only etidronate was available for our use). Pamidronate, given as a single intravenous dosage of 10 to 45 mg appears to rapidly reestablish normocalcemia.^{4,11} A single administration may maintain normocalcemia for several weeks, and can be repeated.⁴ Lower dosages appear to be safe, although treatment of one patient with a single intravenous infusion of 30 mg of pamidronate caused temporary asymptomatic hypocalcemia.¹¹ Another biphosphonate, clodronate, has been shown to prevent acute bone loss in paraplegic immobilized patients.¹³

SUMMARY

We describe an adult patient who developed persistent hypercalcemia while bedridden for more than three months with pancreatitis and sepsis. On the basis of hypercalciuria, suppressed serum intact PTH, suppressed serum 1,25-dihydroxy vitamin D3 and no clinical evidence of malignancy, the diagnosis of immobilization hypercalcemia was established. His hypercalcemia improved during treatment with saline, calcitonin and/or etidronate. With active mobilization and weight-bearing exercises, serum calcium finally normalized. We discuss clinical and laboratory features as well as current modalities of treatment of this rare form of hypercalcemia in adults. □

REFERENCES

1. Strewler GJ, Nissenson RA: Nonparathyroid hypercalcemia. *Adv Intern Med* 32:235-258, 1987.
2. Merli GJ, McElwain GE, Adler AG, Martin JH, Roberts JD, Schnall B, Ditunno JF: Immobilization hypercalcemia in acute spinal cord injury treated with etidronate. *Arch Intern Med* 144:1286-1288, 1984.
3. Osterman J, Lin T, Durkin MW, Cannon EF, Nankin HR: Case report: Hypercalcemia of immobilization in an adult patient with peripheral neuropathy. *Am J Med Sci* 197: 254-256, 1989.
4. Gallacher SJ, Ralston SH, Dryburgh FJ, Logue FC, Allam BF, Boyce BJ, Boyle IT: Immobilization-related hypercalcaemia - A possible novel mechanism and response to pamidronate. *Postgrad Med J* 66:918-922, 1990.
5. Tori JA, Leighton Hill L: Hypercalcemia in children with spinal cord injury. *Arch Phys Med Rehabil* 59:443-447, 1978.
6. Maynard, FM: Immobilization hypercalcemia following spinal cord injury. *Arch Phys Med Rehabil* 67:41-44, 1986.
7. Aurbach GD, Marx SJ: Parathyroid hormone, calcitonin and the calciferols. In Wilson JD, Foster DW (eds): *Williams Textbook of Endocrinology* (Eighth edition, Philadelphia: W.B. Saunders, 1991), p 1455.
8. Stewart AF, Adler M, Byers CM, Segre GV, Broadus AE: Calcium homeostasis in immobilization: An example of resorptive hypercalciuria. *N Engl J Med* 306:1136-1140, 1982.
9. Minaire P, Meunier P, Edouard C, et al: Quantitative histological data on disuse osteoporosis. *Calcif Tissue Res* 7:57-73, 1974.
10. Stewart AF, Broadus AE. Mineral metabolism. In Felig P, Baxter JD, Broadus AE, Frohman LA (eds): *Endocrinology and Metabolism* (Second edition, New York: McGraw-Hill Book Company, 1987), p 1416.
11. McIntyre HD, Cameron DP, Urquhart SM, Davies WE: Immobilization hypercalcaemia responding to pamidronate sodium therapy. *Postgrad Med J* 65: 244-246, 1989.
12. Carey DE, Paisz LG: Calcitonin therapy in prolonged immobilization hypercalcemia. *Arch Phys Med Rehabil* 66:640-644, 1985.
13. Minaire P, Despassio J, Berard E, Meunier PJ, Edouard C, Pilonchery G, Goedert G: Effects of clodronate on immobilization bone loss. *Bone* 8 suppl 1: s63-s68, 1987.



SCMA NEWSLETTER

A PUBLICATION OF THE SOUTH CAROLINA MEDICAL ASSOCIATION
Joy Drennen, Editor
798-6207, in Columbia

Contributions welcomed
1-800-327-1021, outside Columbia
December 1992

HIGHLIGHTS OF THE NOVEMBER 18 BOARD OF TRUSTEES MEETING

The board heard a report that the State Board of Medical Examiners had proposed guidelines for a special volunteer license for retired physicians to the State Legislature.

The board approved the Public Relations and Communications Committee's plan to encourage county societies to adopt standards for providing care for the indigent. The Columbia Medical Society's program will be used as a model.

Approval was granted for SCMA staff to work with the SC Hospital Association on a legislative proposal on health care reform.

In addition, the board nominated Donald G. Kilgore, Jr., MD, for the AMA Council on Legislation. □

MEDICARE UPDATE

Physician Advisory Committees: HCFA has required each Medicare Carrier to develop a Physician Advisory Committee for Medicare, Part B. The purpose of this committee is: (1) to provide a formal mechanism for physicians in the state to be informed of and participate in the development of local medical review policy in an advisory capacity; (2) to provide a mechanism to identify areas which need improvement in the administration of the Medicare program and achieve resolution of identified problems; and (3) to provide a forum for information exchange between physicians and Medicare.

Listed below are the names and telephone numbers of the physician members of the SC Medicare Physicians Advisory Committee. Please let your specialty representative know of any issues you have for this committee.

Allergy: Lawrence Weiner, MD, Columbia, 765-9233; Alternate: Roy D. Markham, MD, Columbia, 783-6824.
Anesthesia: Vincent J. Degenhart, MD, Columbia, 254-2394; Alternate: Curtis L. Baysinger, MD, Columbia, 765-6151.

Cardiology: William J. Hollins, III, MD, Columbia, 256-6511; Alternate: H. Wade Collins, MD, Columbia, 256-6511.

Cardiovascular/Thoracic Surgery: John P. Sutton, MD, Columbia, 254-5140.

Dermatology: Carl A. Johnson, MD, West Columbia, 796-2500.

Emergency Medicine: Ken Dehart, MD, Myrtle Beach, 497-2196.

Family Practice: William H. Hester, MD, Florence, 667-

2800.

Gastroenterology: March E. Seabrook, MD, West Columbia, 794-4585.

General Surgery: Abram J. Richards, Jr., MD, Columbia, 254-3172.

Hematology/Oncology: James D. Bearden, III, MD, Spartanburg, 560-7050.

Internal Medicine: Carl A. White, MD, West Columbia, 796-7270.

Nephrology: Charles J. Owens, MD, Charleston, 554-9312.

Neurology: James E. Carnes, MD, Columbia, 254-6391.

Neurosurgery: Stephen E. Rawe, MD, Charleston, 553-9300.

OB/GYN: Edward R. Cathcart, MD, Spartanburg, 585-9257.

Ophthalmology: Jeffery G. Gross, MD, Columbia, 254-4398.

Orthopedic Surgery: James F. Bethea, MD, Columbia, 256-4323.

Otolaryngology: James R. Wells, MD, Columbia, 252-7888; Alternate: James F. White, MD, Columbia, 252-7888.

Pathology: William B. Crymes, MD, Charleston, 724-2038.

Pediatrics: Charles A. James, MD, Columbia, 252-1801.

Peripheral Vascular Surgery: William O. Holloway, MD, Greenwood, 223-8518; Alternate: Julius W. Babb, III, MD, Orangeburg, 536-2555.

Physical Medicine and Rehabilitation: Dixie Hines, MD, Columbia, 765-6958.

(continued on page 2)

Plastic and Reconstructive Surgery: Harold I. Friedman, MD, Columbia, 799-1212.

Psychiatry: Charles Ham, MD, Columbia, 779-3548.

Pulmonary Medicine: Wayne C. Vial, MD, Charleston, 577-6791.

Radiation Oncology: William Neglia, MD, Columbia, 434-3400.

Radiology: Layne Clemenz, MD, West Columbia, 791-4240.

Rheumatology: Angus M. Brabham, III, MD, Columbia, 779-0911.

Urology: Steven Hulecki, MD, West Columbia, 796-9968.

SCMA: James Hayes, MD, Charleston, 571-6880; Alternate: Barbara Whittaker, Columbia, 798-6207 or 1-800-327-1021.

Code 80502: Effective November 1, 1992, Code 80502 no longer requires documentation prior to payment (Code 80500 was in the November 1992 Newsletter). Medicare will do post-payment reviews.

December Advisory: A Medicare Advisory was mailed the first of December with the 1993 HCPCs. Included are the new codes for observation billing (99219, 99220, 99221) and the new newborn intensive care codes. You should read this advisory carefully.

CLIA Update: Effective for claims processed on or after December 1, 1992, providers with no CLIA number on file will start receiving a special message regarding the CLIA requirements. The message is in the December 1992 Medicare Advisory which will be published shortly. Medicare will NOT deny claims for not having a CLIA number at this time.

CPT Codes 67141-67228: These codes are "repetitive services which are often performed in multiple groups of sessions." When reporting these codes on Medicare patients, you should use the code one time only for the initial session. The Medicare fee reimbursement for the initial session includes payment for any subsequent sessions during the 90-day postoperative period.

Electronic Funds Transfer: HCFA has announced plans for a revised payment policy which would go into effect in 1993. The policy includes a direct deposit option for those providers meeting the qualifications for electronic payment. To qualify for direct deposit, providers must meet all of the following conditions: (1) be an electronic media claims biller and bill at least 90 percent of your total Medicare claims electronically; (2) accept an electronic remittance notice in lieu of a paper remittance notice; and (3) request electronic funds transfer in writing. Watch for more information in a future Medicare Advisory. *If you now meet these qualifications and would like to receive more information on electronic funds transfer (EFT), send your request in writing to: EFT Coordinator, Medicare Part B, PO Box 100190, Columbia, SC 29202-3190.*

Psychiatric Payment Limitations: If you provide non-psychotherapy care (not CPT codes 90835-90899) to an Alzheimer's patient and use diagnosis code 331.0, you will no longer be subject to the psychiatric reduction in payment unless the service being billed is identified as psychotherapeutic in nature (i.e., procedure codes 90835-90899). If you have such Alzheimer's cases since January 1, 1992 for which payment has been reduced you may resubmit claims to the Medicare Service Center.

Medicare Questions: If you have Medicare questions you should call the Provider Service Center at (803) 788-5568 (participating physicians) or 788-5569 (non-participating physicians). If the Service Center is unable to address your questions, please call the representative assigned to your area as follows:

Upstate Area: Hope Garrett (803) 788-0222, Ext. 1320

Midlands Area: Dorothy Pendleton (803) 788-0222, Ext. 1321

Pee Dee and Grand Strand Area: Susan Johnson (803) 788-0222, Ext. 1319

Coastal and Low Country Area: Louise Mankin (803) 788-0222, Ext. 1317

MEDICAID UPDATE

Drug Utilization Review: Effective January 1, 1993, SHHSFC must provide a Medicaid outpatient DUR program to assure that prescriptions are appropriate, medically necessary, and unlikely to cause adverse medical results.

SHHSFC will provide: (1) prospective review of drug therapy by a pharmacy before a prescription is filled; (2)

monthly retrospective review through the Medicaid Management Information System (MMIS) or an electronic drug claims processing system integrated with MMIS to identify patterns of waste, fraud, or abuse; (3) assessment of whether usage complies with predetermined standards; and (4) a program to educate practitioners on common drug therapy problems.

CERTIFICATE OF NEED REMINDER

In July of this year, Governor Campbell signed the Certificate of Need and Health Licensure Act into law. This act is aimed at strengthening the state's Certificate of Need (CON) program by controlling health care costs through elimination of unnecessary duplication of services and the unnecessary expansion of medical facilities and equipment.

Please be reminded that any physician, physician group or other entity who has, at any time, purchased or leased equipment whose total project cost is in excess of \$600,000 is required to apply for an exemption from the SC Department of Health and Environmental Control (DHEC) within six months from July 10, 1992.

Direct questions to Mr. Leon Frishman or Mr. Jerry Paul in Columbia at 737-7200.

STARTING A MINI-INTERNSHIP PROGRAM

Medical societies in SC and all over the country are putting together mini-intership programs and finding that they are very successful in allowing lay persons to experience the physician/patient relationship from a doctor's viewpoint. With today's emphasis on health care costs and health care reform, people sometimes overlook the personal relationship between doctors and patients. Participants typically work with four physicians in a two-day period and follow them through their normal routine. Participants may include community members from the ranks of industry and business, the media, the legislature, education, health care coalitions, and consumer advocacy groups.

If your county society is interested in starting a mini-internship program, you may receive a handbook by calling the AMA at (312) 464-4446.

! CPT CODING ALERT !

Over the next few months, the Health Care Financing Administration will be gathering data on the use of CPT modifier -22 for possible increased payment. Modifier -22 indicates prolonged or otherwise unusual services — beyond those normally associated with the highest level evaluation and management code in a given category (hospital, office, home).

Even though Medicare does not now pay extra for modifier -22, you may want to include it on bills when appropriate so HCFA will have data to evaluate use. ☐

"BABY STEPS"

"Baby Steps," the only treatment program for **chemically dependent pregnant women** in South Carolina, has opened at Springs Memorial Hospital's Lancaster Recovery Center (LRC).

According to the South Carolina Commission on Alcohol and Drug Abuse, one of four expectant women in this state uses some type of drug, prescribed or otherwise, with valium being the most popular. Getting help for chemically dependent pregnant women is difficult because most general hospitals are not affiliated with drug treatment centers.

The "Baby Steps" program accepts women 18 and over regardless of their month of pregnancy. *For information contact Keith D. Shealy, LRC Medical Director in Lancaster at 286-1491.* ☐

STORK SERVICE FOR BABIES WITH DOWN SYNDROME

The SC Mental Retardation Foundation recently announced a new "Stork Service" package for families of newborns with Down Syndrome. The packet includes general information about Down Syndrome and services for infants and toddlers. Postcards are included to link families with organizations which provide services and support individuals with Down Syndrome.

Materials are free to families of newborns with Down Syndrome. Stork Service materials also are available to health care professionals and others who link families of children with Down Syndrome to services in their community.

To request a Stork Service packet, write to the SC Mental Retardation Foundation, PO Box 4346, Columbia, SC 29240, or call 737-6477 in Columbia.

PUBLICATIONS/VIDEOS AVAILABLE

The AMA is providing a new booklet titled **"The Americans with Disabilities Act: A Prescription for Compliance"** to help physicians comply with the requirements of the Americans with Disabilities Act. The booklet includes a summary of the ADA's public accommodation requirements, employment provisions, tax ramifications and a listing of information sources. *AMA members can obtain the booklet at no charge by calling 1-800-AMA-3211.* In addition, the SCMA has an AMA-produced video entitled **"Physician Guide to ADA"** which is available on loan, as well as an AMA document specifically regarding hearing disabled patients. *Please call Pam Taylor at the SCMA office.*

The latest edition of the AMA's video journal is an update on **Health System Reform.** This video provides information to assist physicians in understanding the complex issues involved in reforming the U. S. health system. The government-based approach, employer-based system and the tax incentives to individual's plan are all explored in this video. *Please call Pam Taylor at the SCMA to borrow the video.*

"Older Americans," the newest brochure in the AMA Auxiliary's "Shape up for Life" series, focuses on keeping senior citizens healthy by addressing the nutrition, fitness and safety needs of the elderly and exploring the problems of adverse drug reactions. Copies are available to AMA and AMA Auxiliary members for \$7.95 per 100; for non-members, the cost is \$15.95 per 100. Single copies are free. *Contact the AMA Auxiliary at (312) 464-4470.*

The State Board of Medical Examiners has developed a special presentation entitled **"The Nuts and Bolts of Licensure."** This presentation was designed to help hospitals, medical staffs and others better understand the board's licensure process and requirements and should be of interest to hospital executives, chiefs of staff, medical staff coordinators and anyone involved in physician recruitment. The board will send a speaker to any meeting or visit any hospital requesting the presentation. *For further information, contact Stephen S. Seeling in Columbia at 734-8901.*

MEDICAL SPECIALISTS NEEDED

The Women's Shelter in Columbia is recruiting medical specialists to accept referrals from their health screening clinic. Through its Comprehensive Care Center, the shelter offers preventive health screening physicals to residents. Recently, the program was expanded to offer health screening to homeless people from other area shelters.

Health professionals interested in more information are invited to call the shelter in Columbia at 779-4706. □

145TH SCMA ANNUAL MEETING

Mark your calendars now and plan to attend the 145th Annual Meeting of the South Carolina Medical Association.

- ❖ **WHEN?** April 23-25, 1993
- ❖ **WHERE?** Omni Hotel, Charleston, SC

The theme for the Scientific Assembly will be "Together: Advancing Health Care for South Carolinians." □

DIRECTORY OF SC PHYSICIANS

In the near future, the SCMA will mail to all members a complimentary copy of the Directory of South Carolina Physicians, formerly published by the State Board of Medical Examiners, as well as a new, completely updated copy of the *Physician's Guide to South Carolina Law.*



**BEST WISHES FOR A JOYOUS
HOLIDAY SEASON
FROM THE
SOUTH CAROLINA MEDICAL ASSOCIATION**

PROPOSALS FOR IMPROVING AIDS EDUCATION IN SOUTH CAROLINA*

JOHN C. R. SIMS**

The early years of the AIDS epidemic in the United States presented a disease primarily among a limited number of homosexuals and intravenous drug users in inner cities. In recent years however, AIDS has progressed to the point where over 1.5 million people in the United States are infected with HIV, and already more people have died of AIDS than died in Vietnam. Furthermore, AIDS has spread from its original focal points of New York and San Francisco to all parts of the country, and South Carolina is no exception. In a recent survey conducted by the South Carolina Department of Health and Environmental Control, every county except McCormick reported an HIV infection; all except for five others reported cases of AIDS, and new HIV infections and AIDS cases are appearing at a rate of 100 and 35 a month, respectively.

In response to the rapid spread of AIDS in the world, enormous efforts have been made to develop a vaccine or cure. However, a vaccine to prevent the transmission of HIV is not expected to be developed before the next decade, and its use would not affect the number of people already infected at that time. A safe and effective antiviral agent is not expected to be available for general use within the next several years. In the absence of a vaccine or therapy, the Centers for Disease Control, the National Academy of Sciences, the Surgeon General, and the United States Department of Education have stated that educating individuals about the actions they can take to protect themselves from becoming

infected is the most effective method of controlling the epidemic. This is especially true since the virus is spread almost exclusively as a result of behavior that individuals can control, such as sexual contact or the sharing of drug paraphernalia. As a result, public education on how HIV is transmitted and prevented is one of the ten major components of the statewide AIDS program of the South Carolina Department of Health and Environmental Control. This paper does not attempt to address all aspects of AIDS education at the national or even the state level. Instead, proposals for the improvement of specific aspects of AIDS education in South Carolina will be discussed.

A program for public education, such as AIDS education, is essentially an advertising campaign. The difference from most other advertising, such as consumer advertising, is that instead of a product being promoted, the concept of a healthier lifestyle is being promoted. An effective AIDS education program would be well advised to look at advertising campaigns that have proven especially effective in the past. In a study recently published by the *Journal of the American Medical Association*, 81.7 percent of three to six year-old children could identify McDonald's; but in an article in the *New York State Journal of Medicine*, only 15 percent of a random sampling of teenagers in Massachusetts considered AIDS a reason to change their sexual behavior, even though 70 percent of them were sexually active. Therefore, the methods by which McDonald's advertises will be used to suggest the foundation of an improved AIDS education campaign. McDonald's began by establishing a recognizable symbol. Then a basic message was developed and repeated endlessly in a wide variety of ways and with direction toward a multitude of audi-

*On the basis of this paper, the author received the 1992 Essay award from the South Carolina Institute for Medical Education and Research for the best essay submitted by a medical student.

**Address correspondence to Mr. Sims at Apartment 5, 17 Ehrhardt Drive, Charleston, SC 29403.

ences. Finally, programs were developed to reinforce the basic message.

McDonald's established as its symbol the golden arches, and has developed this symbol to contribute to the company image via color, shape, and sound. With regard to color, the arches have been identified as golden, not yellow, and gold in our society is associated with prestige and excellence, as in Olympic gold medals. Furthermore, the arches have been cleverly designed to integrate with the color of McDonald's most famous product, french fries. With regard to shape, arches may suggest adventure, such as St. Louis' Gateway Arch to the west; or victory, such as the Arc de Triomphe of Paris. With regard to sound, the double arches form an "M," which is not only the first letter of the company name, but if held out becomes "Mmmmm" as in "Mmmmm, Mmmmm good," providing the sound of satisfaction each time the name is pronounced.

If a symbol for the national AIDS education campaign could be identified, it would most likely be the "America Responds to AIDS" logo that appears at the beginning of most AIDS public service announcements, and which has, like the golden arches, been well designed in color and shape. The logo itself is red, which is appropriate for the dual reasons that red symbolizes danger, and because red is the color of blood, the main mode of transmission of HIV. The writing on the logo is white, which adds a facet of authority to the logo since white is often associated with power in our society, such as in the White House, the white collar sector, or especially in this case the medical community (which is frequently depicted in the context of white coats), thereby symbolizing that the medical community stands behind the logo. The logo appears on a background of black, which is often associated with the sinister, most obviously death, and is therefore particularly appropriate in a logo for a fatal disease. The shape of the logo is also of note, because instead of one large red block in the center, the block is divided into longer, narrow rect-

angles, which look more like caskets than the undivided block would have. Furthermore, the black line dividing the red rectangles suggests a flattened EKG line, so often associated in television medical dramas with death. Therefore the "America Responds to AIDS" logo is well designed to simultaneously convey images of danger, death, and authority.

The next step after developing a symbol is to establish a basic message to be conveyed. McDonald's message seeks to convey two concepts: first, that it has a core menu of high quality and visibility products, especially the french fries, Big Mac, and Egg McMuffin; and second, that the product is standardized to a degree such that a customer may purchase a product anywhere in the world, be assured of how it will taste, and therefore be inclined to purchase more.

The basic message for AIDS education has likewise been well defined, and even well defined by the federal government for specific age groups. For elementary school students, the basic message is designed to identify AIDS as a disease mainly of adults which is difficult for children to get (thereby easing excessive fears of the epidemic), and a cure for which is being worked hard for around the world. For late elementary and middle school students, goals include teaching what viruses are, what AIDS stands for, that HIV affects the immune system, the number of people infected with HIV, that AIDS affects people of every social group, and the basics of how HIV is spread. For junior and senior high school students and adults, goals include a greater emphasis on particular transmission pathways and their relative risks, ways to avoid transmission, the association of HIV infection with venereal disease and drug use, steps to take if infection with HIV is suspected, and where to obtain more AIDS information.

After the development of a basic message, it must be conveyed to a variety of audiences in a variety of formats and with high repetition. For example, McDonald's has commercials targeted to children, as with its Ronald

McDonaldland characters; and targeted to young parents to promote its value menu for families. McDonald's also uses various formats of promoting the same product, as with its recent "Big Mac Attack" campaign designed to reinforce the still well known "Two all beef patties, special sauce, lettuce, cheese, pickles, onions on a sesame seed bun" advertisements. Finally, McDonald's repeats its commercials with great frequency. Current AIDS education announcements have done well at developing materials of varying styles and for varying audiences. Some emphasize the difficulty but importance of parents discussing AIDS with their children, other are aimed at teenagers as in "I love sex but I'm not ready to die for it.", etc. However, the frequency of announcements is not as high as it might ideally be, since it is much easier to watch television for a few hours and see a McDonald's commercial than an AIDS commercial. This is especially disturbing since it defeats the purpose of developing highly effective messages if they are not utilized for their maximum effect via repetition. Whether in Aldous Huxley's *Brave New World*, George Orwell's *1984*, or McDonald's campaign for the Big Mac, the truth of the old statement, "Repetition is the mother of genius," cannot be underestimated.

The final aspect of a successful campaign is public outreach programs to reinforce previously existing messages and increase visibility. McDonald's does this through such programs as the Ronald McDonald House and the McDonald's All American Marching Band. With AIDS education, the opportunities are almost limitless but are not being utilized to their fullest. For example, it would be beneficial to have speakers, such as doctors and nurses, appear at high schools to discuss AIDS prevention. However, such programs frequently have road blocks placed in front of them. Last year the chapter of the American Medical Association Medical Student Section at the Medical University of South Carolina offered to make presentations on AIDS to Charleston County high schools, but the offer

was refused without explanation. This is especially frustrating since Charleston County has such a high number of HIV infections.

Another possibility would be a "Get Safe" program similar to the current "Get Smart" program. In the "Get Smart" program, convicts from the state prison (chosen in a variety of sexes and races so the students will have a greater chance of identifying with them) visit junior and senior high schools and graphically discuss how they ended up in prison and the terrible things that happened to them while they were there. The program is considered highly successful and makes a much stronger impression than just lecturing about crime or prisons would. Similarly, a program could be developed to bring people with HIV infection to schools to discuss how they became infected and how the students can avoid infection. This would be especially effective if other teenagers could be included among the speakers, and it may not be difficult to obtain speakers since many people with HIV infection are eager to talk about it and to work to slow its spread. It would also be worthwhile to encourage the integration of AIDS into standard topics of discussion in classes, such as at least a brief mention of HIV during a discussion of viruses in a biology class.

Since the role of schools has been previously mentioned, it would be appropriate to discuss a pitfall to avoid in AIDS education. One of the great complaints teachers express is of the vast amount of paperwork that they are increasingly required to fill out for state programs. In order to maintain teacher enthusiasm for any AIDS program through the schools, it is important to design such programs to create the absolute minimum of extra work for the teacher. A good example is an essay contest sponsored by textile manufacturers in Pickens County in 1984. The topic (textiles) was assigned to an English class with research being the responsibility (and part of the learning process) of the students, not the teacher, and the essays were judged by an outside panel so that practically

no extra work was placed upon the teacher. The worst possible scenario would be for each teacher to be given a strict timetable for completing a list of objectives which, once completed, must be reported on with long, complex forms to be filled out often on the teacher's own time and creating irritation for all involved. Goals for integrating AIDS education within schools should of course be identified, but micromanagement should be avoided and the teachers trusted to do their jobs. Perhaps a brief summary of no more than a page, prepared by a principal and based on oral reports from teachers, would suffice for reporting on a year's worth of AIDS education programs within a school.

Ideally, AIDS education would be closely integrated with related topics such as drugs, sex, and alcohol. However, such topics have a high degree of moral and political baggage associated with them which may cause difficulties in some sectors of the public. Therefore, moral judgments about HIV in any form should, for the sake of simplicity and to avoid causing antagonism against AIDS programs in general, be strictly avoided at this time. The current overriding objective should be the presentation of the most fundamental information about AIDS which, being purely factual in nature, could not easily be used as a basis for political or religious animosity.

Therefore, some ways in which AIDS edu-

cation in South Carolina could be improved include:

- increasing the frequency with which announcements presenting basic AIDS facts are aired or printed.
- allowing and encouraging guest speakers on AIDS within the public schools.
- providing greater tax incentives for individuals or businesses (such as broadcasters or newspapers) to contribute to AIDS education programs.
- insuring that AIDS education programs in schools do not place unnecessary burdens on teachers.

AIDS is not only remarkable because it is so fatal, but also because it is so preventable. South Carolina cannot afford to merely follow national programs, but must develop its own plans to protect itself in the most vigorous ways possible against the AIDS epidemic. □

REFERENCES

1. Fischer, PM., et al. Brand logo recognition by children aged 3 to 6 years. *JAMA*, December 11, 1991-Vol. 226, No.22, pg. 3146.
2. Guidelines for effective school health education to prevent the spread of AIDS. *NY State J Med*, May 1988, pp. 266-272;
3. HIV/AIDS Update. South Carolina Department of Health and Environmental Control, Volume 6, Number 2, February 1992.
4. Jones, J, et al. The South Carolina Department of Health and Environmental Control's response to the AIDS epidemic. *J SC Med Assn*, February 1991, pp. 94-95.

DEAR MR. PRESIDENT:

This editorial was submitted on November 2, 1992—election eve—and is published unmodified. The debates established that all three of you love your country, if in different ways and with different philosophies. You offered different approaches to the perceived crisis of rising health care costs. What follows are twelve suggestions by one physician. They are in no particular order and should not be taken as the official position of the South Carolina Medical Association. Here goes.

1. Lead. Formulate a well thought-out vision of what American health care might be in the early 21st century. Have the patience and courage to allow others to refine and modify your vision. Have the tenacity to see it through. Many of us believe that what's wrong with health care delivery in the United States reflects the lack of any national vision. You'll find numerous concerned, idealistic physicians ready, willing, and able to help you. Take the initiative.

2. Show pride in American medicine. During the debates, we heard this rhetoric: despite the huge American outlay for health care we rank behind other countries in such parameters as life expectancy and infant mortality. Recognize that these data tell us more about American society than they do about American medicine. Our population is extremely heterogeneous. Many of our people simply do not take good care of themselves. The American health care system, *per se*, is second to none. Be proud of us.

3. See physicians as part of the solution not the cause of the problem. Don't believe folks who tell you that the best remedy is pan-physician wallet liposuction. Most American physicians are highly committed professionals whose incomes are by no means exorbitant when you consider how long they've

trained and how hard they work. Remember the Pareto principle, the 20/80 rule. Physician fees make up 20 percent (or less) of health care expenditures, but our critics seem to give us 80 percent of the rap. See beyond them.

4. Allow free enterprise and competition. Recognize that tightly legislating the financial expectations of physicians will not solve our health care delivery problems. Is it really fair that a society that pays center fielders, movie stars, and (blush) attorneys whatever the traffic will bear should regulate physicians' incomes? Do you want your grandchildren served by physicians who weren't among the best and brightest of their generation? Think twice.

5. Promote primary care. Young people still go to medical school mainly because they like science and want to help people. Later, various incentives and disincentives affect their choice of one or another specialty. Today, there is huge incentive to enter procedure-oriented specialties and subspecialties, yet disincentive to enter primary care. Primary care physicians promote cost-effective use of technology. There is an alarming trend for the public to seek highly-technical solutions for problems that can be resolved by competent, caring primary care physicians. Promote the family doctor.

6. Support a two-tiered health care delivery system. We cannot afford a system of universal health insurance providing all things for all people. Nobody would like to do all things for all people at any cost more than we physicians (after all, we enjoy our work!), but the price tag would be staggering. However, our people deserve basic health care services—the things we can do to prolong and sustain meaningful life. Yes, defining “basic health care services” will not be easy, and a two-tiered system will be a hard sell. Lead.

Help society set realistic goals and expectations.

7. *Don't give into special interest groups.* The Oregon plan deserved a better chance. There will always be pressure groups representing special interests. Have the wisdom to see the American population as a living organism. From your perspective, the heart is the economy that keeps it moving. There will always be interest groups eager to siphon blood away from the vital organs (our metaphor would be AV fistulas). Be utilitarian. Stand firm.

8. *Encourage efficiency.* As students and residents in times of plenty, many of us were taught to do everything possible for our patients and to pay little attention to cost-effectiveness. Some of us were told by our seniors: "You'll seldom be criticized for ordering too many tests." American medicine, like American industry, did not heed the management principles taught by Deming and others. American government, on the other hand, adds to inefficiency with an increasingly oppressive set of regulations (OSHA, CLIA, and others). Cut red tape. Reward cost effectiveness.

9. *Strengthen the VA system.* The existing Veterans Affairs hospitals could be the centerpiece provider of basic health care services in a two-tiered system. The system actually works. Moreover, the VA already has in place the computer hardware and software necessary to define what is truly cost-effective for the rest of us. The VA lobby will probably resist offering benefits to those others than veterans. Counter by expanding the system and improving the benefits for veterans and their families. And remind them that, if we have no more major wars (a distinct possibility), there will be no need for the VA by the year 2030. Build on strength.

10. *Support basic research.* Historically, medical research ranks among our best investments. To skimp here is to be penny wise and pound foolish. We've been losing much of our competitive advantage to the Europeans and Asians—just as we've done in

industry. Obtain good advice about what kinds of research should be encouraged—and how and where. Research should not be "public expenditure to satisfy private curiosity." Seek a balance between basic research and applied research. Offer incentives to industry. Help us stay on the cutting edge.

11. *Propose sweeping change in the tort-liability system as applied to medicine.* We acknowledge that malpractice exists and needs to be addressed at every turn. But the present system is grossly inefficient and adds to the cost of health care delivery. Provide for a means for patients to ascertain quickly and efficiently if medical care departed from a standard. Provide for arbitration panels. Provide for adequate—but not extravagant—reimbursement for attorneys, physicians, and others who participate in such a system. Reject the notion that the current system is "the poor man's only door to the courthouse." Propose sweeping legislation. Support change.

12. *Promote healthy lifestyles.* Make rounds with a few doctors in different types of hospitals, and determine for yourself how many of the illnesses you encounter might have been prevented by healthier lifestyles. Promote healthy diets and exercise. Preach avoidance of addictive substances. Take a stand for sexual responsibility. Don't get bogged down in the polar positions taken by the pro-life and pro-choice advocacy groups. Recognize that the trivialization of sex is in part responsible for two major problems in our society: out-of-wedlock childbirth and the AIDS pandemic. Don't be moralistic; be practical. Encourage education. Preach self-responsibility.

The American health care system is an excellent index to American life. If high quality health care is to be provided to all of our citizens at reasonable cost, major changes are needed. Let us know how we can help. Oh, by the way, Mr. President: congratulations, and good luck.

— CSB

FLIGHT 463

Whether it happened over Texas, New Mexico, or Arizona, I'll never know. I was happily debating what to read next when the announcement came: "Is there a doctor on the plane?" Turning around, I saw the dyspneic elderly woman in the seat right behind me. I got up, sat beside her, and accepted the emergency kit from the stewardess. The pulse was strong and regular. There were crackles at the lung bases. I offered her a nitroglycerin tablet. "No thank you, I've just taken my own."

I held her pulse and talked slowly. The history was forthcoming: "76-year-old WF with IDDM, s/p CABG X 4 (1982), with stable angina (last attack: four months ago), now with dyspnea, chest tightness, diaphoresis, and 'feeling weak all over' after getting up to go to the restroom." I continued to talk slowly. She gradually improved. The lungs cleared. We were 50 minutes away from the first stop in California. The issue became whether she should be met by an ambulance.

She didn't want one. Her husband of 52 years would be at the airport. The hospital was only 20 minutes away, and he could drive her. If an ambulance were necessary, he wouldn't let her take such trips to visit her grandchildren any more. Worse, the ambulance bill wouldn't be covered by her HMO,

based in the next county. "The last time, they charged me \$420 to go two and a half blocks." Although I surmised that her left ventricular ejection fraction was now at its baseline, I also knew that myocardial infarction needed to be excluded especially in the context of diabetes. Should I advise against an ambulance, and should I "guess wrong," could I be sued for negligence?

My final decision: no ambulance. I communicated with the HMO, met the husband, explained the risks and that it was possible I could have "guessed wrong," and reminded him to drive carefully. My reward for this small act was a first-class seat for the 20-minute hop to Orange County. Settling into the comfortable upholstery, I mused that just about every family in the United States has probably had at least one brush with the high cost of medical care (not necessarily involving physicians' fees). I took a small measure of pride that I had not allowed myself to be reduced to a quivering mass of jelly because of the possibility that some California lawyer might sue the heck out of me for having guessed wrong. I remembered my father's words: "Son, just do the right thing and then don't worry about it."

—CSB

On the Cover:

THE "IRON LUNG"

In September, 1992, the Centers for Disease Control announced that more than a year had passed since the last case of polio was reported in the Western Hemisphere. This is a giant step toward the goal of worldwide eradication by the year 2000.

The Drinker Respirator pictured on the cover and last used in Roper Hospital about 1955 is a grim reminder of the days when the dread of polio controlled the thoughts, prayers, and even the day-to-day lives of many South Carolinians.

In 1939, one of the worst years for polio in South Carolina, there were 457 cases reported in the state, with 35 deaths. Nurseries, swimming pools and summer camps were closed, school graduations canceled, and alternate seating in movie houses imposed. In 1989, some of the schools that had canceled graduation ceremonies honored their class of '39 with special celebrations 50 years late.

The iron lung was developed by Philip Drinker and L.A. Shaw in 1929. Its use in South Carolina was met with mixed reactions at first. In June of 1939, Dr. J. I. Waring observed that "iron lung respirators have had more dramatic appeal to the public than actual usefulness for physician or patient." By the following month the consensus was that "they (the patients) have both been immensely relieved and made comfortable by the respirator....It seems likely that patients who are given early benefit of the respirator, before paralysis has progressed far, will stand a much better chance of gradual recovery of function and eventual independence of the apparatus."

A part time resident of South Carolina told of her experience in the iron lung:

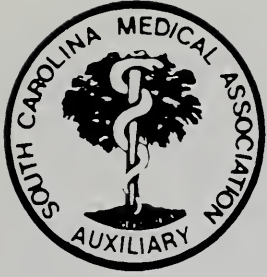
For five weeks I became increasingly dependent upon the lung which "breathed" for me. On the seventh week the M.D.'s ordered I be weaned from the machine starting for a period of a few minutes to a few daylight hours. The very thought of not being able to breathe, if I should drowse off, so terrified me that I begged to be returned to the lung. No such luck! No amount of discussion, threats, or exhortation would overcome that terror. However, as my diaphragm muscles began to strengthen, I was able to achieve several hours of independence out of the machine—while I was awake! During the 8th week, still in excruciating pain from muscle tone deterioration, I was forcibly removed to a private room out of sight from my "friend" – the lung. Still frightened to close my eyes I was literally forced to swallow one good "belt" of distasteful paraldehyde. Instantly I drifted off into a blissful sleep independent of the lung. That did it! The psychological block was breached.

This patient, although a permanent paraplegic, went on to live an active, useful and happy life.

Betty Newsom

The Waring Historical Library

(This Drinker respirator was donated to the Waring Library by Laurie L. Brown, M. D., one of the anesthesiologists who directed its use at Roper Hospital.)



Auxiliary Page

SCMAA PHYSICIANS FAMILY SUPPORT

In the *Bulletin* of the Women's Auxiliary to the American Medical Association, Mrs. Henry Rails, 1940-1941 chairperson of the Public Relations Committee, wrote: "Few persons are more conscious of human suffering, or of the need for relieving pain and dispelling discouragement than physicians' wives." Change "wives" to "spouses" and this quote is still true today. Unfortunately, many spouses forget to include ourselves as hurting and needing relief. Obviously, medical families can and do suffer. The Physicians Family Support Committee is one of the thinking, caring and acting committees of SCMAA concerned with taking care of the medical family.

The committee has two major purposes. One is to work closely with the SCMA Committee trying to insure support and help for physicians' families who are experiencing concerns and problems due to some type of impairment. The physicians have a statewide committee which meets quarterly. In addition, they have divided the state into "treatment/intervention" regions. Regional meetings are held frequently and they sponsor weekly Caduceus (medical AA) meetings. The SCMAA subcommittee of Physicians Family Support is structured to parallel the SCMA Committee.

Subcommittee goals for the 1992-1993 year are to: (1) maintain and strengthen membership in the four "Caduceus-Alanon" groups; (2) determine and organize the most facilitative structure for the spouse regional team groups; (3) encourage more spouses to participate with the physicians in their quarterly meetings; (4) continue educational efforts to make resources known; (5) continue to meet with and participate with the physicians' group; and (6) provide training for new members interested in becoming a member of a regional treatment team.

Subcommittee activities thus far: (1) Met with SCMA committee in June and presented SCMAA report. (2) Contacted all Caduceus groups for progress reports and support. (3) Included a SCMAA information page in the updated forms for physicians who are contracting with the SCMA committee for assistance.

If you or anyone in your family is hurting or concerned about a family member, if you have questions or needs, and/or if you would like to be a part of this group, please contact Cathy Boland at the SCMA or Kaye Borgstedt (Mrs. M. E.) at 1-534-2585. We care and are ready to act on our caring. Remember, information is kept in a confidential manner.

The second major purpose of Physicians Family Support takes a different route in that the goal of the subcommittee is to send messages of congratulations, sympathy or condolences, encouragement and recognition to physicians and their families. You can call Dee Jewell (Mrs. James H.) at 1-366-4818 to explain the circumstances and she will send a handwritten message. Let this subcommittee strengthen the bond between the SCMAA, SCMA and physicians' families.

Kaye Borgstedt, Chairperson
Dee Jewell, Co-Chairperson

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